

Review of Australia's international waste-related reporting obligations

REPORT

- Final Report
- 2 October 2012



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Table 1 Australia's international waste-related reporting obligations

Obligation	Data requested example	Comments
Basel Convention <i>Covers hazardous waste, movement of hazardous waste across boundaries, generation of hazardous waste, household waste, action to minimise the generation of hazardous waste and their efficacy.</i>	Amount of hazardous waste generated Amount of household (within municipal) waste Transboundary movements of hazardous waste (data from notifications forms systems) Efforts to reduce the volume of hazardous waste generated Health & environmental effects of hazardous waste	Common units are tonnes & cubic metres. Data requested annually. Reporting period is calendar year (Jan-Dec), due by following December (1 year lag). Last report: Australia reported in April 2012 for the 2010 year.
UN Framework Convention on Climate Change / Kyoto Protocol <i>Covers greenhouse gas emissions, including waste-related emissions from solid waste to landfill, wastewater and incineration.</i>	Amount and materials composition of waste to landfill Landfill location, local climate, landfill controls. Amount of greenhouse gas emissions from landfilled waste Flaring or energy generation from waste Waste-related emissions from wastewater & incineration (with or without energy recovery)	Tonnes of waste & composition of waste data are combined with data on local climates for landfill to produce site-specific emissions inputs to the national greenhouse gas inventory. The NGERS/OSCAR system is the main mechanism for compiling the national emissions inventory, which is then reported publicly. Data required annually for national emissions inventory.
OECD <i>Has specific systems and requirements for member countries and hazardous wastes (recognised under Basel). Has additional programs and reporting requirements covering other wastes, including through reporting against the common environmental indicator set for member countries.</i>	Tonnes of waste generated, recovered/recycled, disposed of to landfill & incinerated, nationally and by industry sector. Composting sometimes reported as a distinct pathway. Hazardous waste.	Common units are tonnes or kilograms, sometimes litres. Some hazardous waste reporting covered under Basel. Reporting on household, municipal, commercial & industrial, construction & demolition and waste by industry sector happens through individual survey thematic instruments and/or country environmental assessments.
Stockholm Convention <i>Covers persistent organic pollutants, including stating that waste movements of these pollutants must be in accordance with the Basel Convention. Items containing or contaminated by the chemicals are also covered.</i>	Amounts of new and stockpiled bulk chemicals, across use and waste phases. Volumes of Convention chemicals disposed of and means of disposal. Volumes of Convention chemicals imported for disposal and exported for disposal. Chemical specific questionnaires covering management of waste issues including regulations, technologies, volumes, experiences Data on the concentration of Convention chemicals in the environment are also collected and reported	Reported in kilograms only (not tonnes or litres as per Basel) Four yearly reporting. 2 nd reporting period (1/1/06 to 31/12/09) reported on 1/2/11. Next report due 31/08/14. About four to eight chemical specific questionnaires are received for completion each year.
Other (discussed in body of report): Rotterdam Convention, Waigani Convention, UN Commission on Sustainable Development (including Agenda 21), Global Methane Initiative, Antarctic Treaty, Spent fuel & radioactive waste management conventions, Antarctic obligations, marine dumping convention, Bilateral Agreement with East Timor on hazardous waste.		



Executive summary

Background

The management of waste in Australia is primarily the responsibility of the states, territories and local governments, which regulate and manage waste according to their respective legislation, policies, plans and programs. The Australian Commonwealth Government has responsibility for national legislation, strategies and policy frameworks for waste, including measures that give effect to obligations under international agreements.

The Australian Commonwealth Government has a number of ongoing mandatory and voluntary national and international waste-related reporting obligations. The international obligations can be the product of Treaties, Conventions, Agreements or other instruments. The instruments may take different approaches to data and reporting and use different definitions and classification systems for waste.

A standardised classification and terminology for waste is necessary for managing, monitoring, collecting data, and for national and international reporting. Inconsistent waste classifications and terminologies contribute to data gaps and data bias and make it difficult to aggregate and report data. The lack of a common language also decreases the usefulness of shared information and makes it difficult to evaluate outcomes of projects, policies, laws and business transactions. It can also discourage resource recovery.

Much of the data required for national and international reporting purposes are collected by the states and territories and then aggregated nationally. Variation in the way waste is classified and defined between jurisdictions can present difficulties for reporting at the national level on waste activities. An understanding of the classifications, definitions and reporting arrangements in state and territory policies, regulations and guidelines; as well as the gaps and extent to which these align with the requirements set out in international obligations, will assist with the National Waste Policy reforms, particularly those associated with Strategy 4 (the introduction of a national definition and classification system for waste that aligns with definitions in international Conventions, and Strategy 16 (the development of a national waste data system and publication of a three-yearly current and future trends waste and resource recovery report – the National Waste Report).

Approach

The project has been undertaken to provide part of the evidence base to support these National Waste Policy reforms. The project has been executed via a combination of desk-based research and stakeholder consultation. An analysis of the findings has been used to produce a review of the current waste-related international and national reporting commitments; and to identify the need for additional work or data gathering to improve the alignment between state and territory reporting and the international obligations.



The desk-based research has involved a review of the relevant international waste-related Treaties and Conventions to understand the Australian Government's reporting obligations, data needs and primary waste definitions and classifications. This has also involved a review of relevant legislation (federal, state and territory), definitions of waste, and waste classification systems. A further aspect of the research has been to compare the combined international obligations to the underlying state and territory data systems and arrangements.

The list of international obligations that were investigated has been developed with reference to the Australian Treaties Database along with additional web-based research on current international treaties and Conventions.

The following treaties and Conventions were reviewed as part of the study:

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Stockholm Convention on Persistent Organic Pollutants (POPs)
- The Organisation for Economic Co-operation and Development (OECD) Member Reporting Requirements
 - Waste Reporting Indicator Reporting Requirements
 - The OECD Control System for Waste Recovery
- United Nations Framework Convention on Climate Change (UNFCCC)
- Kyoto Protocol to the United Nations Framework Convention on Climate Change
- The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
- The Waigani Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- United Nations Commission on Sustainable Development (including Agenda 21)
- Global Methane Initiative (formerly the Methane to Markets partnership)
- The Antarctic Treaty
- Joint Convention On The Safety Of Spent Fuel Management And On The Safety Of Radioactive Waste Management
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter
- Bilateral Agreement with East Timor on the Import of Hazardous Waste for Disposal in Australia.

Where necessary consultation has been undertaken with the relevant Convention Secretariats; and relevant documentation and reports (both published and unpublished) have been reviewed as part of the process (see Appendix A). Contact with officials in government departments in the states and territory administrations of Australia has also been undertaken where appropriate, to check legislative details and reporting requirements.



In order to manage the analysis of the various international obligations, each obligation was assigned to one of three groupings: the Group 1 obligations represent those which have the most direct relationship to waste management (and typically have the more onerous reporting requirements); the Group 2 obligations have a less strong relationship to waste management; and in case of the Group 3 obligations, whilst their requirements might map against the objectives of Strategies 4 and 16 of the National Waste Policy, their principal purpose relates to non-waste management environmental issues.

The study has also included a forward look at international Conventions where discussions are known to be underway on particular waste streams, or where changes to existing Conventions are being debated that could have additional waste reporting obligations, or lead to changes to existing obligations.

Findings

Each international obligation that is listed above has a different purpose, scope and relevance to waste management. The Basel Convention, together with the Waigani Convention, the Bilateral Agreement with East Timor and the OECD Control System for Waste Recovery are all directly related to the management of hazardous waste.

The OECD Waste Indicator Reporting Obligations and the UN Commission on Sustainable Development (including Agenda 21) make specific requests for waste management information to inform a variety of reports and digests. The UN Framework Convention on Climate Change and the Kyoto Protocol request national information in respect of the emission of greenhouse gases from waste management operations.

The Antarctic Treaty, the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, include waste management as part of a wider remit.

The following two pages provide a summary list of key content required under Australia's main international waste-related reporting obligations and, at Table 2, a breakdown of that key content against particular obligations.

Summary – key content required under Australia's international waste-related reporting obligations

- Action taken to minimise the generation of waste
- Disposal/recovery facilities operated, including capacity
- Total amount of waste generated
- Amount of waste imported/exported
- Action taken to minimise the generation of hazardous waste
- Total amount of hazardous waste generated
- Total amount of hazardous and other waste generated, by type



- Total amount of hazardous waste imported/exported
- Amount of hazardous waste and other waste sent to recovery and disposal
- Municipal waste generated
- Amount of municipal waste destined for treatment, disposal and recovery
- Generation of waste by industry sector
- Amount of waste generated, recovered, recycled by waste stream (eg C&D) or product (eg WEEE)
- Amount of non-hazardous waste going for recycling, composting, incineration or landfill disposal
- Split of municipal waste from household and other municipal wastes
- Waste to landfill, wastewater & waste incineration related emissions of greenhouse gas
- Reporting against collection type
- Composition of municipal waste.

Table 2 Key content under some of Australia's international waste-related reporting obligations, mapped against some individual obligations

Key content	International waste-related reporting obligation					
	Basel Convention	Stockholm Convention	OECD (Includes indicators. OECD Control System reports via Basel)	UNFCC & Kyoto Protocol	UN Agenda 21	Global Methane Initiative
Action taken to minimise the generation of waste	✓		✓		✓	
Disposal/recovery facilities operated, including capacity	✓		✓	✓	✓	✓
Total amount of waste generated	✓*		✓			
Amount of waste imported / exported	✓		✓			
Action taken to minimise the generation of hazardous waste	✓	✓	✓		✓	
Total amount of hazardous waste generated	✓	✓	✓			
Total amount of hazardous and other waste generated, by type	✓		✓		✓	
Total amount of hazardous waste imported/exported	✓	✓	✓			
Amount of hazardous waste and other waste sent to recovery and disposal	✓	✓	✓	✓		
Municipal waste generated	✓		✓			
Amount of municipal waste destined for treatment, disposal and recovery	✓		✓			
Generation of waste by industry sector			✓			
Amount of waste generated, recovered, recycled by waste stream (eg C&D) or product (eg WEEE)		✓	✓	✓		
Amount of non-hazardous waste going for recycling, composting, incineration or landfill disposal			✓			
Split of municipal waste from household and other municipal wastes	✓		✓			
Waste to landfill, wastewater & waste incineration related emissions of greenhouse gas				✓		✓

Note: OECD requirements also extend to reporting against collection type (traditional collection, separated collection, bulky) and composition of municipal waste (which is also an input requirement for UNFCC/Kyoto Protocol reporting across waste streams). Reporting to the United Nations Environment Programme, other than Agenda 21, has not been included. Antarctic, marine and radioactive waste-related obligations are also not included. Some of this content is specified in the head-text of the Treaty, Convention or other agreement, while others are the product of subsequent decisions by the Parties or Secretariats. * Basel's coverage of total waste generation extends to hazardous wastes, mixtures with hazardous waste, household wastes and some waste residues.



Waste reporting requirements vary between the obligations. Some requirements are set out in the official text of the obligations themselves, with regular reporting cycles and specific data needs being identified. Other obligations such as the OECD Waste Indicator Reporting are no less onerous in terms of the amount of data that is requested, but the detailed requirements with regard to reporting arrangements are not specified in the top-level agreement or instrument. Reporting systems and data requirements are clearest where there are dedicated data collection forms specified as part of the obligation, as is the case of the Basel Convention and the OECD Waste Indicator Reporting.

Australia appears to report regularly in respect of the Basel Convention and OECD agreements. However, some of the reporting forms that have been submitted by the Australian Government for both the Basel Convention and OECD reporting that have been reviewed during this project have not always contained the full data sets that were required, or the information that was provided for a given year has not always been accurate. Verification of OECD Waste Indicator data is carried out by the OECD secretariat in consultation with the Australian Government.

With the exception of data relating to the import/export of hazardous waste under the Basel Convention, and greenhouse gas emissions from landfills and other waste management operations in respect of the Kyoto Protocol, which are collected through systems administered by the federal government; national level reporting currently relies on the collation of state and territory level data from a variety of sources. This process would be made easier if the required state and territory information was held in one place, was available in the same format, covered the same period of time, and presented the same type of information (in terms of the definition and classification of wastes, and waste quantities).

In respect of the Group 1 international obligations, the Basel Convention is implemented at the national level by the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* and the import and export of wastes covered by the Convention are managed under a notification and permit system by DSEWPaC. The permit arrangement provides a direct source of information on international movements of hazardous waste for reporting purposes. However, reporting arrangements under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* do not provide information in respect of waste generation; the provision of waste management facilities; efforts to reduce waste; or the movement of wastes within or between states or territories.¹

Although the Movement of Controlled Waste National Environment Protection Measure (Controlled Waste NEPM) does not have a statutory relationship to the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* (or the Basel Convention), reporting under this NEPM has some potential to provide the basis for a national waste data and classification system which could align with Australia's international waste-related reporting obligations. However, existing waste classification and reporting arrangements under the Controlled Waste NEPM fall short of the needs

¹ While the focus of the Basel Convention (which reporting under the Act is to support) is on international movements of waste, the Convention also covers some domestic hazardous or other waste issues.



of the Basel Convention (and related agreements). The Controlled Waste NEPM is discussed in detail in section 4 below.

The Stockholm Convention requires that wastes containing chemicals specified under the Convention be handled, collected, transported, stored and disposed of in accordance with the requirements of the Convention. Basel Convention obligations are to be taken into account with respect to environmentally sound disposal and transport across international boundaries. Specific requirements exist for polychlorinated biphenyls (PCBs) and listed polybrominated diphenyl ethers. Reporting requirements centre on volumes of chemicals and wastes traded and/or destroyed as well as information sharing on technologies, techniques and processes used.

The OECD Waste Indicator Reporting obligations are not covered by specific national legislation or arrangements. It appears that OECD Waste Indicator reporting is reliant upon a variety of data sources, which implies that verification of individual data sets may be difficult and time consuming. With respect to the OECD Control System for Waste Recovery, waste tracking and reporting arrangements are covered by the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*, delivered via Basel reporting. However, there is some concern that the integrity of reporting of international movements of wastes for recovery may be complicated by variations in the physical state and/or composition of the waste that is destined for recovery.

The reporting of waste-related information under the UN Framework Convention on Climate Change and the Kyoto Protocol is adequately addressed by arrangements under the *National Greenhouse Gas Inventory Act 1997* and the *National Greenhouse and Energy Reporting Act 2007*.

With regard to the Group 2 international obligations: waste is excluded from the Rotterdam Convention. The Waigani Convention is a multi-lateral agreement under Article 11 of the Basel Convention, and as such imports of waste covered by the Convention should be captured through arrangements under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*.

Since 2002, waste-related reporting in respect of obligations to the UN Commission on Sustainable Development (CSD) (including Agenda 21) has been in response to themes covered by individual CSD Cycles. National reports to the Commission on Sustainable Development are provided on a voluntary basis. Given the variation in CSD reporting requirements, there is no specific federal legislation or reporting arrangements in place, and any responses made to requests for information from the Commission are likely to draw upon a variety of formal and informal reports and data sets. Other United Nations reporting, including to the UN Environment Programme, has not been covered in this study due to the *ad hoc* nature of these requests.

Similar to the CSD, the Global Methane Initiative has no formal reporting requirements; although the Australian Government has submitted a country specific profile in respect of the nation's landfills and landfill gas projects.



With the exception of the Bilateral Agreement with East Timor on the Import of Hazardous Waste for Disposal in Australia, which is managed under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*, the Group 3 international obligations are managed under administrative arrangements overseen by federal government departments or their agencies.

In respect of the definition and classification of waste (including hazardous wastes and other wastes), the state and territory governments have implemented legislation and arrangements that define waste and classify different waste types. Often, the same wastes or materials are defined and classified in multiple, different ways, for different purposes (such as management of waste, compared to data collection and reporting), within a single jurisdiction. The variation in definitions of waste and classification of waste types between jurisdictions has significant implications for the collection, collation, analysis and reporting of waste in respect of Australia's international obligations. The current use of different definitions of waste and waste classification systems by individual jurisdictions leads to inefficiencies and gaps in waste data reporting by state and territory authorities to the national bodies responsible for reporting against Australia's international obligations. Currently there is no formal mechanism for reporting the types and quantities of different waste streams that arise within the states and territories.

Australia has no formal mechanism to collect data and information on the generation of hazardous waste required for international reporting under the Basel Convention. The Controlled Waste NEPM provides a generally effective mechanism, which is used by all states and territories, for tracking and reporting on the movements of controlled waste across domestic borders, although there is variation between jurisdictions in how this information is recorded and stored (with some substances not being tracked in some jurisdictions, nor covered by other data arrangements parallel to their controlled waste tracking systems). The data collected on interstate movements could potentially be used as a proxy for the amount of hazardous waste generated, but it does not capture the hazardous waste that is generated and disposed of within a single state (without crossing a border).

The NEPM also does not capture information about all of the waste types that are listed in the Basel Convention. The NEPM does not capture information about interstate movements of Annex II wastes under the Basel Convention (household waste, and residues from the incineration of household waste). Public reporting under the NEPM also uses a shorter, higher-level list of material types or substances than those in the underlying tracking systems.

In respect of collecting information about the activities to reduce or eliminate hazardous and other wastes, and the number and types of disposal or recovery facilities that are operated within Australia, as is required by the Basel Convention, again there is no formal mechanism by which this information is collected and reported by the individual jurisdictions. Similarly Australia also has no formal mechanism at the state and territory level to collect information in respect of the generation of household, municipal, hazardous and nuclear waste as required by the OECD Waste Indicator Reporting obligations.



From the perspective of national government, the current combined picture on underlying state and territory data arrangements does not fully-acquit the combined requirements of Australia's key waste-related international reporting obligations. There are issues of transparency, comparability, accuracy, completeness, clarity and timeliness with current underlying waste and resource recovery data arrangements. There are also issues with the underlying waste and resource recovery data arrangements in respect of specific content required by the reporting obligations. The two tables following (Table 3 and Table 4) summarise these key issues for national government.

Table 3 Current data arrangements against data system quality principles

Data system quality principles	General issues with current underlying data arrangements
<i>Transparency</i> – data documented and verifiable	Significant issues exist with the public documentation of input data across many data products and underlying systems. Major data sets and outputs are not able to be verified and may undergo little validation during their production. Many data systems and products do not provide a transparent description of their data methods. Some data sets are not compiled and many not released publically (such as with hazardous waste).
<i>Comparability</i> – data is produced by the same methodologies and can be compared across jurisdictions	Definitions, classifications and data methods can differ significantly across current systems and products. As above, many systems and products (such as audit data sets) do not specify their methods, input data and workings, preventing standardisation and comparisons on a like-for-like basis.
<i>Accuracy</i> – uncertainty in data values is minimised	Significant inaccuracies exist across many data sets and systems. Few systems and data products contain a public estimate of uncertainty or error. Independent, third-party audit and assurance of waste and recovery data is rare.
<i>Completeness</i> – all sources within state boundaries are identified and accounted for	Even taking materiality thresholds for completeness into account, major geographic, subject matter and material flows gaps exist across current data arrangements. Differences in definitions, classifications and scope/boundary conditions around waste data across different systems contribute to these gaps when aggregating. Difference between 'total waste' and 'waste dealt with by waste industry' a key completeness issue with international obligation acquittal.
<i>Clarity</i> – information is understandable and accessible	Significant time and resource costs exist when users attempt to combine the currently-fragmented data on waste and recovery. Few comprehensive, easily accessible and searchable combined data products exist. Clarity problems are compounded by lack of transparency regarding methods, input data and workings.
<i>Timeliness</i> – reporting occurs on a regular schedule to enable informed decisions to be made	Major problems exist here. Some data sets from some jurisdictions are missing entirely, or produced only on a schedule (such as biennially) which fails to meet the annual reporting requirements of the obligations. Time lag problems are critical: some data sets can take two or three years from the end of the reporting period to be released, meaning aggregated reporting deadlines cannot be achieved and that data available to users is often too out of date to be fit for purpose.

Source: Australian Government, Department of Sustainability, Environment, Water, Population and Communities, 2012.

Table 4 Current data arrangements against key content required by the international obligations

Key content required	How do underlying Australian systems compare?
Action taken to minimise the generation of waste	Little to no data.
Disposal/recovery facilities operated, including capacity	Some data in public domain due to waste infrastructure database & map, but still gaps. Little to no facility capacity data available.
Total amount of waste generated	Good capacity to aggregate recovery, recycling & landfill disposal amounts, but scope of data more limited than obligations require. Little to no data on volumes to incineration or disaster wastes. Still some apples-to-oranges differences in state and territory systems regarding scope and coverage (eg non-metro).
Amount of waste imported/exported	Little to no data, except for hazardous waste. Some packaging data includes imports & exports.
Action taken to minimise the generation of hazardous waste	Little to no data.
Total amount of hazardous generated	Some data on hazardous waste moving across borders. Little to no data on hazardous waste within a single jurisdiction. Little data disclosed publically.

Key content required	How do underlying Australian systems compare?
Total amount of hazardous and other waste generated, by type	Some data available against hazardous waste types, but lists in Basel, NEPM, NEPM reporting, hazardous tracking systems & other systems do not align. Major gaps in materials type data for non-hazardous waste.
Total amount of hazardous waste imported/exported	Good data.
Amount of hazardous waste and other waste sent to recovery and disposal	Some data in public domain but gaps and consistency issues exist. Energy recovery data and data for some particular wastes (eg organics) poor in completeness and accuracy. Majority of recovery data collected voluntarily.
Municipal waste generated	Good data derived from major collection services contracts. Data quality poorer with transfer stations and smaller councils. Transparency and timeliness issues exist.
Amount of municipal waste destined for treatment, disposal and recovery	Good data derived from major collection services contracts. Data quality poorer with transfer stations and smaller councils. Transparency and timeliness issues exist. Poor fit with energy recovery and 'treatment' aspects of requirements.
Generation of waste by industry sector	Little to no data.
Amount of waste generated, recovered, recycled by waste stream (eg C&D) or product (eg WEEE)	Some jurisdictions have improved arrangements for allocations of waste to stream but still rely on estimation with closed loads. Some jurisdictions have no split between C&I and C&D. Waste data against products or product groups usually poor (eg end of life vehicles).
Amount of non-hazardous waste going for recycling, composting, incineration or landfill disposal	Most recovery and recycling data sets rely on voluntary surveys with results of varying data quality. Landfill tonnages often better than recovery & recycling tonnages. Little to no data on incineration (such as of clinical wastes). Organics data questionable.
Split of municipal waste from household and other municipal wastes	Little to no capacity to split municipal waste data into its component parts.
Waste to landfill, wastewater & waste incineration related emissions of greenhouse gas	Generally good data, within limitations of emissions estimation methods. Quality problems exist around waste composition data.
Reporting against collection type	Reasonable data, with some coverage gaps, exists for key household collections (kerbside recycling, kerbside disposal, some green waste) but data quality is poorer for other collection types (such as bulky municipal waste, or C&I collections).
Composition of municipal waste	Some data exists in some jurisdictions for composition of household (if not municipal) waste, mostly derived from kerbside audits. No nationally-consistent materials typology is used, nor is a standard compositional audit method. Composition data at point of landfill disposal is poor.

Source: Australian Government, Department of Sustainability, Environment, Water, Population and Communities, 2012.



In terms of a forward look, there are forthcoming changes to the international management of e-waste, and the global shift towards the use of the Globally Harmonized System of Classification and Labelling of Chemicals that could potentially impact international reporting.

The International Telecommunication Union (ITU) and the Secretariat of the Basel Convention (SBC) signed an agreement in March 2012 which is aimed at protecting the environment from the effects of e-waste. The ITU-SBC collaboration seeks to collect and recycle the hazardous materials by introducing safeguards on the management of e-Waste. In addition, the Secretariat for the Basel Convention is currently preparing specific guidance on e-waste; including a major piece of work on the classification of e-waste for recovery, direct reuse, or as waste items. The OECD has also prepared guidance on the environmentally sound management (ESM) of used and discarded personal computers. This work, once completed may eventually impact upon the reporting requirements for e-waste and management of e-waste under the Basel Convention and the OECD Control System.

As electronic waste is being considered at an international level, early consideration should be given to the inclusion of this waste stream in the national definition and classification systems that are to be used in Australia.

The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is a new chemical classification system developed by the United Nations (UN). The new GHS system does not match current systems used whether those systems are within waste legislation such as the Basel Convention, or within transport legislation such as the ADR international goods transportation agreement (European Agreement Concerning the International Carriage of Dangerous Goods by Road). As the GHS system is a UN level document, and its preparation has included input from organisations including Australia, the European Union and the OECD, it is likely that any international agreements that are based upon the hazardous properties of chemicals will be revised to reflect the new system. This may lead to additional materials being covered under the revised arrangements. For example the GHS could impact upon the Basel Convention and the OECD Control System which would then have further implications for federal and state definitions of hazardous waste and their associated reporting requirements.

Recommendations

This study has made a number of recommendations in respect of further work to support the introduction of a national definition and classification system for waste that aligns with definitions in international conventions (Strategy 4 of the National Waste Policy), and the development of a national waste data system and publication of a three-yearly current and future trends waste and resource recovery report – the National Waste Report (Strategy 16). These relate to:

- 1) An investigation of potential mechanisms for introducing national definitions and classifications for waste and recovered resources at the state and territory level
- 2) An investigation of the potential to develop a conversion system that effectively interprets existing state and territory waste definitions and classifications so that they can be easily and accurately aligned with national and international definitions and classifications



- 3) A detailed review of existing state and territory arrangements for hazardous waste data collection and reporting, including but not limited to the Controlled Waste NEPM, covering -
- the type and scope of information that is currently collected and held by individual state and territory environmental protection agencies
 - the quality, integrity and availability of this data
 - alignment with international waste-related reporting obligations
 - options to address any data gaps to better meet these international reporting obligations (including options that may involve the Controlled Waste NEPM).

1. Introduction

1.1. Study purpose and background

Management of waste in Australia is primarily the responsibility of the states, territories and local governments which regulate and manage waste according to their respective legislation, policies, plans and programs. The Australian Government has responsibility for national legislation, strategies and policy frameworks for waste, including measures that give effect to obligations under international agreements.

The Australian Government has a number of ongoing mandatory and voluntary national and international waste-related reporting obligations. The international obligations can be the product of Treaties, Conventions, Agreements or other instruments. The instruments may take different approaches to data and reporting and use different definitions and classification systems for waste.

A standardised classification and terminology for waste is necessary for managing, monitoring, collecting data and for national and international reporting. Inconsistent waste classifications and terminologies contribute to data gaps and data bias and make it difficult to aggregate and report data. The lack of a common language also decreases the usefulness of shared information and makes it difficult to evaluate outcomes of projects, policies, laws and business transactions. It can also discourage resource recovery.

Two of the strategies in the *National Waste Policy: Less Waste, More Resources* (National Waste Policy), which was agreed to in 2009 by Australia's environment ministers and endorsed by the Council of Australian Governments, aim to address issues related to inconsistent definitions and classifications for waste, and data reporting:

- *Strategy 4* aims for the introduction of a national definition and classification system for waste that aligns with definitions in international Conventions (as well as for when a product or material ceases to become a waste and reflects classifications in relevant policies and instruments)
- *Strategy 16* aims to develop and publish a three-yearly current and future trends waste and resource recovery report – the National Waste Report; underpinned by a national waste data system that provides access to integrated national core data on waste and resource recovery.

The purpose of this project is to gather information on the current situation with regards to international reporting as part of establishing the evidence base to support reforms under strategies 4 and 16 above by:

- Documenting, analysing and comparing Australia's international waste-related reporting obligations (including the definitions and classifications that are used)
- Comparing the international obligations to the arrangements and systems in the states and territories and determine their compatibility (in terms of timing, frequency, scope, definitions and classification)



- Assessing the gaps and extent to which state and territory government policies, regulations and guidelines align with the requirements set out in international obligations.

Some of the data required for national and international reporting purposes are collected by the states and territories and then aggregated nationally. Variation in the way waste is classified and defined between jurisdictions can present difficulties for reporting at the national level on waste activities. An understanding of the classifications, definitions and reporting arrangements in state and territory policies, regulations and guidelines; as well as the gaps and extent to which these align with the requirements set out in international obligations, will assist with the National Waste Policy reforms outlined above.

1.2. Methodology

The project has been undertaken via a combination of desk-based research, stakeholder consultation and analysis of the findings has been used:

- to produce a review of the current waste-related international and national reporting commitments and
- to identify the need for additional work or data gathering to improve the alignment between state and territory reporting and the international obligations.

The desk based research has involved a review of the relevant international waste Treaties and Conventions to understand the Australian Government's reporting obligations, data needs and primary waste definitions and classifications. This has also involved a review of relevant national and state and territory level regulations, in particular in the field of 'hazardous' waste management.

Consultation has been undertaken with the relevant Secretariats, where necessary, and relevant documentation and reports (both published and unpublished) have been reviewed as part of the process (see Appendix A). Contact with officials in government departments in the states and territory administrations of Australia has also been made where appropriate, to check legislative details and reporting requirements.

The list of international obligations has been developed with reference to the Australian Treaties Database along with additional web-based research on current international treaties and Conventions.

The study has also included a forward look at international Conventions where discussions are known to be underway on particular waste streams, or where changes to existing Conventions are being debated, that could have additional waste reporting obligations or lead to changes to existing obligations.



2. Review of international waste-related reporting obligations

2.1. Introduction

The primary task of the study was to review the international reporting obligations of the Australian Government in relation to waste management.

This section presents a summary of each international convention, treaty or agreement that has been reviewed, taking into account the primary purpose of the Convention, key reporting requirements, data sets, definitions and classifications. Further information on each treaty, Convention or agreement is provided in Appendix B.

A list of relevant treaties, conventions or agreements (obligations) is provided below (Section 2.1.1). A three-level hierarchy has been adopted when reviewing the obligations (Section 2.1.2). Section 2.2 provides a summary of Group 1 reporting obligations. Section 2.3 provides a summary of Group 2 reporting obligations. Section 2.4 provides a summary of Group 3 reporting obligations. Section 2.5 provides a consideration of the primary differences, similarities and reporting elements of the main obligations.

2.1.1. List of relevant Treaties and Conventions

The following treaties and conventions were reviewed as part of the study:

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Stockholm Convention on Persistent Organic Pollutants (POPs)
- The Organisation for Economic Co-operation and Development (OECD) Member Reporting Requirements
 - Waste Indicator Reporting
 - The OECD Control System for Waste Recovery
- United Nations Framework Convention on Climate Change (UNFCCC)
- Kyoto Protocol to the United Nations Framework Convention on Climate Change
- The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
- The Waigani Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- United Nations Commission on Sustainable Development
- Global Methane Initiative (formerly the Methane to Markets Partnership)
- The Antarctic Treaty

- Joint Convention On The Safety Of Spent Fuel Management And On The Safety Of Radioactive Waste Management
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter.

2.1.2. Level of analysis required

As not all treaties and obligations have the same requirement for waste management information, it was necessary to perform a tiered level of analysis. The focus of the more detailed analysis is on reporting obligations that have:

- A significant waste focus
- Are within the scope of the National Waste Policy
- Have relevance to a national classification and definition system
- Have relevance to a national data and reporting system for waste and recycling.

Table 5: Reporting obligation review grouping

Group	Obligation	Level of Analysis
1	Basel Convention, OECD, Stockholm, UNFCCC/Kyoto	High
2	Rotterdam, Waigani, UN Commission on Sustainable Development	Medium
3	Marine dumping/marine waste, Antarctic waste, Radioactive waste	Low

High level analysis – this has included a description of the international obligation and its intent in relation to waste and environmental management. The analysis also includes a consideration of the timing and frequency of reporting and the precise reporting requirements (i.e. what must be reported on – for example whether the agreement relates to municipal waste generation, and/or recycling, and/or disposal activity). The specific definitions and classifications that are used by each obligation are described.

The high level analysis has also considered the similarities and differences between the obligations, particularly if there is any overlap in data provision and classifications, or key differences that may have implications for reporting. A consideration of the links back to state and territory reporting obligations has also been included (see Section 4) and any additional reporting requirements have been referenced.

Medium level analysis – for each obligation in this grouping this has included a description of the international obligation; its primary purpose; and a consideration of its relevance and links to national data reporting on waste management.

Low level analysis – for each obligation in this grouping the analysis has focused on a description of the key purpose of the obligation together with a consideration of any links to the objectives of the strategies 4 and 16 from the National Waste Policy.



2.2. Summary of Group 1 international obligations

The following five Conventions are considered to fall into analysis Group 1 and their key elements are summarised below. Further information on each Convention is also provided in Appendix B. Issues for state and territory reporting are discussed in Section 4.

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Stockholm Convention on Persistent Organic Pollutants
- The Organisation for Economic Co-operation and Development Member Reporting Requirements
 - Waste Indicator Reporting
 - The OECD Control System for Waste Recovery²
- United Nations Framework Convention on Climate Change
- Kyoto Protocol to the United Nations Framework Convention on Climate Change.

² Australia's OECD membership of the OECD involves participation in both the OECD Control System for Waste Recovery (linked to Basel) and broader OECD data collection and reporting activities, including reporting against waste indicators. The Control System has no separate or additional reporting requirement, as it uses Basel Convention data and reporting arrangements.

Table 6 Basel Convention

Agreement	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	Date	Australian signature	1992
			Entry into force	1992
Purpose	To reduce the volume of hazardous waste produced and its environmental impact. Use of a 'prior informed consent' notification system for hazardous waste import/exports. Annual reports detailing the amount of wastes imported and exported along with its disposal or treatment fate are required.			
Implemented in Australia by	Hazardous Waste (Regulation of Imports and Exports) Act 1989 and amendments.			
Definitions/ Classifications used in the Convention	Convention defines: <ul style="list-style-type: none">■ Hazardous waste classification, including hazardous properties■ Recovery and disposal methods (Annex IV)■ Categorisation for activity that has given rise to the waste			
Reporting requirements	In-country activity to reduce hazardous and non hazardous waste volumes, details of disposal and recovery facilities (including capacity), measures to implement the Convention.			
	Waste movements including information on: <div>Exports and imports for hazardous and other wastes-<ul style="list-style-type: none">■ amount exported/imported■ waste category■ hazardous characteristics■ disposal methods■ country of transit■ country of destination■ final disposal operation (D code)■ recovery operation (R code).</div> <div>General reporting-<ul style="list-style-type: none">■ definitions of wastes, hazardous waste, other wastes■ control procedures for transboundary movements■ activity to reduce or eliminate hazardous and other waste■ disposal or recovery facilities operated.</div>			
Are reporting obligations defined in the agreement?	Yes, the Basel Convention sets out what information is required to be reported for each calendar year. There is a 'Transmission of Information' questionnaire that sets out the information to be provided annually by each country.			
Reporting units	No units are stated in the Convention texts. The Transmission of Information forms use tonnes and m ³ for quantities.			
Reporting Frequency	Reporting of waste movements is for a calendar year on an annual basis and reports are due by December of the following year, which means a one year lag in the data. There is also a delay in publishing on the Basel Convention website. Australia last reported in April 2012 for the year 2010. The most recently published information on the website is for the year 2009. General reporting is based on submission of an initial response and when national changes occur.			
Last Reported	April 2012 with data for the 2010 calendar year. May 2011 with data for the 2009 calendar year.			
Reporting Guidance	Improving National Reporting by Parties to the Basel Convention			
Reporting Responsibility	Director, Hazardous Waste Section at the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC)			

Table 7 Stockholm Convention

Agreement	Stockholm Convention on Persistent Organic Pollutants	Date	Australian signature	2001
			Entry into force	2004
Purpose	To control, restrict and eliminate specified Persistent Organic Pollutants through production restrictions and import bans. Covers a range of persistent organic pollutants (POPs) whose manufacture and use is to be eliminated or restricted as well as a number of identified organic by-products of thermal treatment operations whose formation and release must be minimised and, where feasible, ultimately eliminated.			
Implemented in Australia by	A National Implementation Plan outlines the actions taken by Australia to reduce POPs. National management plans are also in place for certain chemicals. There is no single piece of legislation implementing the Convention in Australia but various aspects are addressed in the <i>Industrial Chemicals (Notification and Assessment) Act 1989</i> , Customs (Prohibited Exports) Regulations 1958, Customs (Prohibited Imports) Regulations 1956, Agricultural and Veterinary Chemicals (Administration) Regulations 1956, the National Strategy for the Management of Scheduled Waste and various state and territory legislation.			
Definitions/ Classifications used in the Convention	Chemicals are identified by their name and chemical abstract number (CAS) Waste is not defined within the Convention. Waste source categories include waste incineration, heath and power generation, waste disposal and open burning processes, see below and Appendix B.			
Reporting requirements	Reporting for the purposes of Article 15 is via an electronic system. The most recent report was divided into Parts A-D. Part A was a general section, Part B covered progress on implementing the provisions of the Convention and Part C on progress towards eliminating the use of PCBs. Part D was a section in which to add additional information. There was a range of yes/no questions that relate to implementation of policies and procedures that are in line with the Convention and general activities to reduce PCBs and eliminate waste stockpiles. Specific data was required for questions that cover the amount of Annex C chemicals (hexachlorobenzene, pentachlorobenzene, PCBs, dioxins and furans) either released from a range of waste sources or imported/exported annually (this also included the amount imported/exported for disposal). Releases of Convention chemicals from waste sources are to be reported in mass toxic equivalence per year (g TEQ/a). Waste source categories covered include waste incineration, heat and power generation, waste disposal and open burning processes. These are the high level categories and a number of sub categories sit within. Waste incineration includes municipal, hazardous, medical, sewage sludge, wood waste incineration. Disposal includes leachate from hazardous/non-hazardous landfill and composting. Any waste containing Annex C Chemicals produced as a result of the manufacture of metals, chemicals, minerals must also be reported. Volumes of convention chemicals produced, imported / exported must also be reported (in kg). Some chemicals are imported / exported for disposal by Australia, particularly from South Pacific Countries. In addition, to the Article 15 reports, about four to eight chemical specific questionnaires are received each year according to decisions of the Conference of the Parties or the Persistent Organic Pollutants Review Committee. These chemical specific questionnaires will often include questions relating to wastes such as how they are regulated, disposal volumes, disposal infrastructure, disposal technologies, disposal experiences etc. Further, under Article 16 Australia is required to report data on levels of the Convention chemicals in the environment. The levels of chemicals in the environment will reflect not only those that have entered the environment through production and use but also through waste disposal.			

Are reporting obligations defined in the agreement?	Yes for Article 15 reports and an electronic reporting tool is used. The tool is provided by the secretariat and is used by parties to the convention to submit information. Other ad hoc questionnaires are based on decisions of the Conference of Parties or the Persistent Organic Pollutants Review Committee.
Reporting Units	Reporting units are in kg (rather than tonnes that are used for waste reporting in relation to the Basel Convention).
Reporting Frequency	Article 15 reporting occurs every four years with only two rounds of reporting carried out to date. Typically four to eight ad hoc questionnaires are received each year.
Last Reported	The last reporting period ended on the 31 July 2011 (covering period 1 Jan 2006 to 31 Dec 2009). The next report is due on the 31 August 2014.
Reporting Guidance	Guidance is available from the secretariat for completion and submission of the National Reports and is available on the secretariat website: "Stockholm Convention on Persistent Organic Pollutants (POPs) Electronic Reporting System Pursuant to Article 15 of the Convention, User Manual" http://chm.pops.int/Implementation/Reporting/NationalReportingAssistance/tabid/776/Default.aspx
Reporting Responsibility	Assistant Secretary, Environment Protection Branch, Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC)

Table 8 OECD Waste Indicator reporting requirements

Agreement	OECD Waste Indicator Reporting	Date	Australian joined OECD	1971
			Recommendations adopted	1991
Purpose	<p>The OECD reports on a range of environmental indicators in order to track environmental progress and performance, inform policy development and to track sustainable development. Waste generation forms one of the key indicator sets, which divides waste into municipal, industrial, hazardous and nuclear categories for reporting on generation.</p> <p>Waste indicator information is reported in a number of publications and the online statistical databases held by the OECD:</p> <ul style="list-style-type: none">■ Environmental Outlook■ Environment at a Glance■ Environmental Factbook■ Environmental Data Compendium. <p>Waste information and data is primarily gathered via two questionnaires, the State of the Environment (SoE) and Annual Quality Assurance (AQA) questionnaires.</p>			
Implemented in Australia by	Australia is a member of the OECD and therefore responds to information requests as required.			

Definitions/ Classifications used in the convention	<p>The OECD provide definitions for the core waste indicators:</p> <p>Waste, municipal waste, household waste, industrial waste, hazardous waste and nuclear waste</p> <p>Municipal waste includes household waste and similar waste.</p> <p>Household waste is waste from households as well as other waste, which, because of its nature or composition, is similar to waste from households.</p> <p>The definition of municipal waste also includes:</p> <ul style="list-style-type: none"> bulky waste (e.g. white goods, old furniture, mattresses); and <p>yard waste, leaves, grass clippings, street sweepings, the content of litter containers, and market cleansing waste, if managed as waste. It includes waste originating from:</p> <ul style="list-style-type: none"> households commerce and trade, small businesses, office buildings and institutions (schools, hospitals, government buildings). <p>It also includes:</p> <ul style="list-style-type: none"> waste from selected municipal services, i.e. waste from park and garden maintenance, waste from street cleaning services (street sweepings, the content of litter containers, market cleansing waste) if managed as waste. <p>It includes waste from these sources collected:</p> <ul style="list-style-type: none"> door-to-door through traditional collection (mixed household waste), and- fractions collected separately for recovery operations (through door-to-door collection and/or through voluntary deposits). <p>Industrial waste generation is defined by the source of waste production which is linked back to the relevant industrial sectors that generate the waste, and are based on International Standard Industrial Classification system.</p> <p>Hazardous waste is defined according to the Basel Convention definitions.</p> <p>Selected waste streams include construction and demolition, sewage sludge, end of life vehicles, used tyres, electric and electronic scrap, oils.</p> <p>Reuse, recycling, composting, recovery, disposal, treatment and landfill are all defined terms in the data collection questionnaires and reported in some of the publications listed above.</p> <p>Disposal includes incineration without energy recovery. Recovery is a wide ranging category and includes material, energy and biological recovery (and therefore includes composting). Reuse is also included in this definition.</p> <p>The State of the Environment and Annual Quality Assurance questionnaires define the terms that are used within them.</p> <p>The specific definitions that are used in the OECD Waste Indicator Requirement documents are given in Appendix B below.</p>
Reporting requirements	<p>To provide information on waste management activity and waste generation within Australia for the statistical database (SIREN) and OECD environmental reports. Reporting requirements are primarily according to the key indicators for waste which are municipal, industrial, hazardous and nuclear waste. Movements of hazardous waste are also included. The primary methods of waste data collection are through completion of the waste sections of the State of the Environment Questionnaire and the Annual Quality Assurance questionnaire.</p> <p>These questionnaires also collect information on recycling and composting activity (%), the proportion landfilled or sent to energy recovery, waste generation by sector, waste generated by selected waste streams, household waste generation, number and capacity of treatment and disposal installations, hazardous waste generation and movements (import/export).</p> <p>In addition to the two primary reporting cycles (discussed below) there is a need to respond to requests for data verification and supplemental information as required on an as requested basis.</p>
Are reporting obligations defined in the agreement?	<p>There is no formal obligation regarding reporting on environmental indicators defined in the agreement. Information reporting is on a request basis.</p>

Reporting Units	Varies by publication, tonnes, kg, kg per capita, percentage diverted, number of treatment facilities or tonnes throughput of waste.
Reporting Frequency	The State of the Environment (SoE) questionnaire information is requested every two years and the Annual Quality Assurance (AQA) questionnaire information is requested every year. In 2012 both questionnaires will be sent out approximately during the middle of the year and responses required by the end of the year. In 2011 the reporting deadline was October for the SoE questionnaire and November for the AQA questionnaire. Any additional requests are determined by the OECD secretariat.
Last Reported	Australia last submitted information for each questionnaire in 2011, providing data for 2010. There is therefore a delay in the reporting of information and a further delay between publication of the information on the OECD website and in environmental reports. The most recent waste dataset currently available online is for the year 2009.
Reporting Guidance	Each questionnaire contains guidance for completion of the document, definition of terms and a description of the information that is to be included against each question.
Reporting Responsibility	The Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) and the Australian Bureau of Statistics both respond to OECD requests for information on waste management.

Table 9 OECD Control System for Waste Recovery

Agreement	OECD Control System for Waste Recovery The original system was established in 2001 by the Council Decision C(2001) 107/Final on the Control of Transboundary Movements of Wastes Destined for Recovery Operations	Date	Australian signature	Joined OECD in 1971
			Entry into force	2001
Purpose	Controls the transboundary movements of wastes destined for recovery operations between member countries of the Organisation for Economic Co-operation and Development (OECD). <i>"It aims at facilitating the trade of recyclables in an environmentally sound and economically efficient manner by using a simplified procedure as well as a risk based approach to assess the necessary level of control for materials".</i>			
Implemented in Australia by	Article 11 <i>Hazardous Waste (Regulation of Imports and Exports) Act 1989</i> and <i>Hazardous Waste (Regulation of Exports and Imports) (OECD Decision) Regulations 1996</i> and amendments.			
Definitions/ Classifications	<p>The OECD system contains specific definitions of waste and transboundary movements. The definition of waste is based on the destination of the material, i.e. whether the material is destined for disposal/recovery or not. A distinction is made between recovery (Appendix 5B, where 13 types of operations are listed as recovery – the descriptions of which are identical to those in the Basel Convention) and disposal (Appendix 5A, where 15 types of operations are listed as disposal) which is different to the Basel Convention which defines disposal as both disposal and recovery operations. The OECD decision only covers waste destined for recovery. Waste destined for disposal is covered by the Basel Convention. Radioactive waste is excluded.</p> <p>The OECD system also defines hazardous and non hazardous wastes that are suitable for export and expands upon the definitions within the Basel Convention in respect of the risk to health and the environment.</p> <p>Wastes are either 'green' list wastes which are non-hazardous wastes suitable for export or amber list wastes which are considered hazardous for export and must follow the control procedures set out in the OECD System.</p> <p>The definitions are in the form of appendices of specified wastes (similar to the Basel Convention), which are classified as hazardous and needing notification.</p> <p>Please see Appendix B below for information on definitions.</p>			

Reporting requirements	There are no reporting requirements stated in the original OECD decision, however the decision references the Basel Convention as an exemplary framework to be followed for reporting purposes
Are reporting obligations defined in the agreement?	No specific reporting obligation, however the decision references the Basel Convention reporting framework and that this should be used.
Reporting Units	No units are given in the agreement.
Reporting Frequency	Consistent with those set out in the Basel Convention.
Last Reported	N/A
Reporting Guidance	Guidance Manual for the Control of Transboundary Movements of Recoverable Wastes
Reporting Responsibility	Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC)

Table 10 UN Framework Convention on Climate Change and Kyoto Protocol

Agreement	UN Framework Convention on Climate Change and Kyoto Protocol	Date	Australian ratification	1997
			Entry into force	2008
Purpose	Both the Convention and Protocol limit greenhouse gas emissions. The Kyoto Protocol has targets for greenhouse gas reduction. The Convention was passed in 1992 at the Rio Earth Summit, the Protocol was signed in 1997 and places legal limits on greenhouse gas emissions. The Convention does not have legally binding targets. The Protocol is the primary focus in respect of controlling greenhouse gas emissions.			
Implemented in Australia by	National Greenhouse Gas Inventory Act 1997			
Definitions/ Classifications	Greenhouse gases and waste sources are defined in the Protocol.			
Waste Reporting requirements	Parties must report emissions from the energy, industrial processes, solvents, agriculture, and waste sectors. For emissions from waste management operations, this includes methane releases from: <ul style="list-style-type: none">■ solid waste disposal on land■ wastewater handling■ waste incineration■ other sources. The terms 'solid waste' and 'other sources' are not further defined within the Protocol or guidance documents.			
Are reporting obligations defined in the agreement?	Yes there is a defined reporting obligation in Article 12 of the Convention (national inventories) along with guidance provided on the website. There are further reporting requirements in the Protocol. Uncertainty in reporting is to be addressed and reporting will be subject to expert review. Guidance document 'Reference Manual on Accounting of Emissions and Assigned Amount, UNFCC'.			
Reporting Units	Tonnes of carbon dioxide equivalent (CO2) equivalents.			
Reporting Frequency	Annual reporting is required, based on a calendar year, covering the period from the base year (1990) until 2 years prior to the date of submission.			



Last Reported	Australia last reported in 2011 for the period 1990-2009.
Reporting Guidance	UNFCCC Reporting Guidelines on Annual Inventories Australian National Greenhouse and Energy Reporting (Measurement) Technical Guidelines (NGERS Guidelines)
Reporting Responsibility	Department of Climate Change and Energy Efficiency, GPO Box 854, Canberra

2.2.1. Summary of Group 1 international reporting obligations

Basel Convention

- The Basel Convention controls the import, transit and export of a list of specified hazardous wastes from signatory countries, using a system of 'prior informed consent'.
- The Basel Convention requires annual reports detailing the amount of hazardous and other wastes imported and exported along with its disposal or treatment fate. The amount of hazardous and other wastes generated within the country and actions taken to minimise hazardous and other waste generation must also be reported. Other wastes referred to in the Convention relate to household waste and the residues from the incineration of household wastes.
- The Basel Convention focuses on a range of wastes that are defined as hazardous (based on origin, and/or composition or characteristics), and two types of wastes defined as other waste (household waste, and residues from the incineration of household waste). The Convention's reporting requirements include an obligation to report on household waste generation, import / export and efforts to reduce this waste stream.
- The information required under the Basel Convention reporting is clearly defined and set out in a system of reports with guidance for completion. A 'Transmission of Information' questionnaire is required to be completed annually.
- Systems have been established in Australia for gathering some of the information for the Basel Convention (see Section 4 for more information and discussion).
- The data required to meet the reporting obligations, for both hazardous and other waste streams, comes from a number of different sources (see Section 4 for more information and discussion).

Stockholm Convention

- The Stockholm Convention covers a range of persistent organic pollutants whose manufacture is to cease and use their use phased out.
- All countries are required to produce a National Implementation Plan. Australia submitted its implementation plan in 2006.
- Only two rounds of reporting according to Article 15 have been carried out by the Convention. The last was in 2011. The next round will be in 2014.
- Article 15 reporting is via an electronic questionnaire tool and covers releases of Convention chemicals from a range of sources. For waste, these source categories include waste incineration, heat and power generation, waste disposal and open burning processes.



- Waste incineration includes the incineration of municipal, hazardous, medical, sewage sludge, and wood waste. Disposal includes leachate from hazardous/non-hazardous landfill and composting.
- Any waste containing Annex C chemicals (hexachlorobenzene, pentachlorobenzene, PCBs, dioxins and furans) produced as a result of the manufacture of metals, chemicals, and minerals must also be reported.
- Volumes of convention chemicals produced, imported/exported must be reported (in kg). Some chemicals are imported / exported for disposal by Australia, particularly from South Pacific Countries.
- Four to eight chemical specific questionnaires are received every year.

OECD Waste Indicator Reporting and Information

- There is no formal Convention or Treaty relating to OECD waste reporting requirements. The OECD requests information on a set of key waste indicators that is then used to inform a number of periodic or one off publications.
- OECD waste indicator information is collected primarily via the State of the Environment and Annual Quality Assurance (AQA) questionnaires. The former are sent out every two years and the latter annually.
- The type of information that is required by individual questionnaires varies. Requests can be for information in relation to: waste generation, recycling, resource recovery and disposal; or waste types, including hazardous and non-hazardous waste; or disaggregated data requests for information in respect of individual waste streams or industry sectors, or household waste.
- Definitions are provided for the key terms used in the questionnaires (see Appendix B below for more information).
 - Industrial waste generation is defined by the source of waste production and is related to the industrial sectors that generate the waste, based on the International Standard Industrial Classification (SIC) system.
 - Hazardous waste is defined according to Basel Convention definitions.
- The OECD also requests information in respect of selected waste streams that include construction and demolition, sewage sludge, end of life vehicles, used tyres, electric and electronic scrap, oils.
- Information on the amount of waste (in tonnes) sent to disposal and treatment/recovery operations is requested, together with information about the number and capacity of waste treatment and recovery facilities. Disposal includes incineration without energy recovery operations. Recovery includes material, energy and biological recovery (and thus includes composting). Reuse is also included in the definition of recovery.

OECD, Control System for Waste Recovery

- The OECD system for the control of transboundary movements of waste destined for recovery is very similar to the Basel Convention but covers a wider variety of wastes.



- There are operational differences between the Basel Convention and the OECD Control System, particularly with regard to the control of movements of prescribed wastes using 'commercial controls' rather than through the use of 'prior informed consent'. The OECD Control System does not specify its own reporting requirements; it simply references the Basel Convention reporting requirements.
- There are minor differences between the Basel Convention and the OECD Control System lists of waste types and characteristics. For example, the two Y codes in Annex II of the Basel Convention are not included under the OECD Control System; neither are the UN codes for hazardous properties.³ The OECD Control System list covers a wider variety of wastes and includes explicit guidance on the movement of recyclable materials and non-hazardous waste. While the UN dangerous goods class list does not appear directly in the OECD Decision, the list is generally in alignment with OECD and Basel Codes.
- The OECD Control System does not require additional reporting of movements of hazardous wastes for recovery, as these will be picked up through Basel annual reporting of the import/export of hazardous wastes for recovery.

UN Framework Convention on Climate Change and Kyoto Protocol

- The United Nations Framework Convention on Climate Change (UNFCCC) and associated 1997 Kyoto Protocol provide the overarching emissions-reporting obligations and guidelines for parties to those treaties. In Australia, the *National Greenhouse and Energy Reporting Act 2007* is the main legal instrument for meeting emissions-reporting obligations. There are also accompanying regulations and other legal instruments.
- Article 12 of the Convention contains a reporting obligation (production and delivery to the Convention Secretariat of an annual, national emissions inventory).. The Protocol also contains reporting obligations. Reporting is on an annual basis through the use of an online tool.
- Data are required on the emission of a range of greenhouse gases from specified sectors and sources. For the waste sector, methane and nitrous oxide emissions from solid waste disposal on land (landfill), waste water treatment and waste incineration are determined for greenhouse gas accounting purposes. All reporting is done using cumulative emission data since 1990, and requires the conversion of all emissions into tonnes of CO₂ equivalence.
- Some waste-related emissions, such as from on-site treatment and disposal of waste, are required to be reported, but are allocated to other categories or sectors in the inventory. For example, greenhouse gas emissions from on-site treatment and disposal of organic wastes in food manufacturing would be allocated to the industrial emissions category in the inventory.
- Waste sector reporting is limited to greenhouse gas emissions from disposal of waste on land (landfill), wastewater handling and waste incineration. (Note: landfill gas accounts for the bulk of Australia's total greenhouse gas emissions from the waste sector (78%). There is a choice of estimation methods for landfill, which requires information on tonnages of waste, material

³ Annex II Y codes are Y46 and Y47. These cover household wastes and residues from waste incineration.



composition (organic/inorganic), and climate factors. There is an online reporting tool which calculates emissions.

- There are no specific definitions for the waste terms used in the Protocol.
- All reporting is in terms of CO₂ equivalence, and requires data manipulation using agreed conversion factors. Changes in estimation or in the conversion factors may require extensive dataset reworking due to cumulative reporting.
- As the reported data is based on estimated levels of emissions, the data includes a degree of uncertainty. A considerable amount of supporting guidance has been provided to encourage the submission of verifiable and accurate data. Uncertainty is to be estimated or measured in reporting.
- The Kyoto Protocol officially expires in 2012, although ongoing discussions are under way to allow the introduction of a similar protocol after this date. As yet, no clear targets have been proposed and the date for the signing of any replacement protocol is not yet known. The Convention, including its reporting requirements, is an ongoing obligation.

2.3. Summary of Group 2 international obligations

The following four obligations are considered to fall into analysis Group 2 and their key elements are summarised below in tables 11 to 9. Further information on each obligation is also provided in Appendix B below. Issues for state and territory reporting are discussed in Section 4.

- The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
- The Waigani Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- United Nations Commission on Sustainable Development
- Global Methane Initiative (formerly the Methane to Markets partnership).

Table 11 Rotterdam Convention

Agreement	Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade	Date	Australian ratification	Signed in July 1999
			Entry into force	May 2004
Purpose	The Convention covers shared responsibility and information sharing in relation to hazardous chemicals; contributes to the environmentally sound use of these chemicals; and provides a national decision making process regarding their import and export. The Convention provides a process for ensuring that the import of specified chemicals and pesticides to signatory countries is controlled by a system of Prior Informed Consent. Information exchange is required when a national decision to ban a certain chemical is taken by a signatory country.			
Implemented in Australia by	The Department of Sustainability, Environment, Water, Population and Communities (DSEWPac) is the designated national authority for industrial chemicals and is the lead agency in Australia for the Rotterdam Convention. <i>The National Industrial Chemicals Notification and Assessment Scheme (NICNAS)</i> is the Australian Government regulator of industrial chemicals and their regulations implement Australia's obligations of the Rotterdam Convention for industrial chemicals.			

	For pesticides, <i>the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF)</i> is the designated national authority and is also responsible for implementing Australia's obligations under the Rotterdam Convention for chemicals with an agricultural or veterinary application.
Definitions/Classifications	Some of the chemicals are listed in the Stockholm Convention. The Rotterdam Convention defines 'chemicals', 'banned chemicals', 'severely restricted chemicals' and 'severely hazardous pesticide formulations'. Waste (along with a number of other materials, e.g. radioactive materials, pharmaceuticals, food) is specifically excluded from the scope of the Convention.
Waste Reporting requirements	The exclusion of waste from the scope of the Convention means that reporting requirements do not extend to materials that are classified as waste.
Are reporting obligations defined in the agreement?	There is no obligation to report waste under the Convention.
Reporting Units	Not applicable.
Reporting Frequency	Not applicable to waste.
Last Reported	Not applicable to waste.
Reporting Guidance	Not applicable to waste.
Reporting Responsibility	The Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) is the lead agency in Australia for the Rotterdam Convention.

Table 12 Waigani Convention

Agreement	Waigani Convention on the Control of Transboundary Movements of Hazardous waste and their disposal	Date	Australian ratification	September 1995
			Entry into force	October 2001
Purpose	<p>The Waigani Convention is a multi-lateral agreement under Article 11 of the Basel Convention. The Convention bans hazardous waste imports to Forum Island Countries and controls some radioactive waste. It is specific to the South Pacific Region and Forum Island Countries. Exports from Forum Island Countries to Australia or New Zealand are permitted.</p> <p>The main effect of this Convention is to ban the import of all hazardous and radioactive wastes into South Pacific Forum Island Countries. It also enables Australia to receive hazardous wastes exported from South Pacific Forum Island countries which are not Parties to the Basel Convention. There are 24 countries within the coverage area of the Waigani Convention.</p> <p>Radioactive wastes imported to and exported from Forum Island Countries must be in accordance with the International Atomic Energy Agency regulations.</p>			
Definitions/ Classifications	<p>Hazardous waste and transboundary movements are defined in the Convention in Article 2. As the Waigani Convention is a multi-lateral agreement under Article 11 of the Basel Convention it is therefore similar in scope and uses the definitions set out in the Basel Convention.</p> <p>States which are Parties to the Basel Convention must not trade in hazardous wastes with non-Parties to the Convention, unless an Agreement is put in place in accordance with Article 11 of the Basel Convention.</p> <p>Y46 (household waste) and Y47 (residues from the incineration of household waste) are</p>			

	defined as hazardous waste for the purposes of the Convention so these wastes should also not be imported.
Waste Reporting requirements	The Convention has reporting obligations for member countries that are similar to those set out in the Basel Convention and uses similar reporting forms to the Transmission of Information questionnaire. Transboundary movements between Australia and the South Pacific Region and Forum Island Countries are also captured by Basel Convention reporting carried out by Australia via the annual Transmission of Information forms to the Basel Secretariat. For example in 2009, Australia reported the import of 250,000 tonnes of used lead acid batteries from Kiribati
Are reporting obligations defined in the agreement?	The Waigani Convention describes various forms of information that should be transmitted between countries and to the Secretariat of the Waigani Convention, namely the Pacific region Environment Programme (SPREP), which administers the Convention. reporting requirements include national definition of hazardous waste, illegal import activity, amount of hazardous waste generated, measures to reduce or minimise hazardous waste, accident notification, disposal and recovery facilities operated within the national jurisdiction, and transboundary movements of hazardous and radioactive wastes..
Reporting Units	Metric tonnes are used, although there is no formal requirement in the Convention with respect to the use of particular units.
Reporting Frequency	Annual reporting to SPREP is for the previous calendar year, and is reported in August each year. Reporting related to issues such as changes in definition, restrictions on transboundary movements of radioactive waste, reduction and/or elimination of waste generation is updated as required. Reporting on transboundary movements within the Secretariat's jurisdiction, on accidents and disposals that did not proceed is updated annually.
Last Reported	Data for the 2011-12 financial year provided in 2012.
Reporting Guidance	No specific guidance has been identified for the Waigani Convention.
Reporting Responsibility	Hazardous Waste Section, Department of Sustainability, Environment, Water, Population and Communities (DSEWPac).

Table 13 UN Commission on Sustainable Development

Agreement	United Nations (UN) Commission on Sustainable Development (CSD), including Agenda 21	Date	Australian ratification	1992
			Entry into force	1992, 2003
Purpose	<p>The Commission on Sustainable Development was formed in 1992 after the Rio Earth Summit. Agenda 21 is an international framework agreement for pursuing global sustainable development that was endorsed by national governments, including the Australian Government, at the 1992 Rio Earth Summit. Chapter 19 relates to the Rotterdam Convention, Chapter 20 requires nations to become signatories of the Basel Convention and Chapter 21 covers the environmentally sound management of solid waste and sewage related issues.</p> <p>The UN Commission on Sustainable Development meets annually. Two year implementation cycles were agreed in 2003 with an agreed program of work in place up until 2016/17. The Implementation Cycle in 2010–2011 has considered waste management, in particular hazardous and solid waste management.</p>			
Definitions/ Classifications	<p>A full range of waste terms are not defined in the original Agenda 21 document. Chapter 20 references the Basel Convention.</p> <p>Chapter 21 defines solid wastes as including all domestic refuse and non-hazardous wastes such as commercial and institutional wastes, street sweepings and construction debris.</p>			

Waste Reporting requirements	Chapter 20 has reporting requirements in relation to hazardous waste production and management. Health impacts of waste should be examined and risk assessments prepared. National systems for tracking waste quantities should be established.
Are reporting obligations defined in the agreement?	There is no defined reporting arrangement in the Agenda 21 agreement. Annual reporting was in place up until 2002. This was reviewed and in order to reduce the burden on countries, national reports that reflect progress made in the themes in each CSD cycle are required instead. CSD Cycle 18/19 (covering the period May 2010 to 2011) included a focus on solid waste management, including hazardous and solid waste. National reports are to be provided on a voluntary basis that reflect development in the areas of interest. Alternatively, case studies or good practice examples can be submitted. Reporting on the topic areas of the programme cycle was requested by July 2009.
Reporting Units	Units are not defined, the areas of reporting for waste management are: <ul style="list-style-type: none"> ■ Prevention, minimization and environmentally sound management of hazardous wastes ■ Environmentally sound management of solid (non-hazardous) wastes and sewage, in the context of integrated planning and management of land resources.
Reporting Frequency	Countries are now asked to provide national reports that reflect on progress made in the themes under consideration in each CSD cycle.
Last Reported	It would appear that Australia may not have reported against the CSD18/19 cycle, as there is no report from Australia for this reporting cycle available on the UN website. The UN produced a reported on Trends in Sustainable Development – Chemicals, Mining, Transport and Waste Management 2010–2011. This referenced OECD datasets for waste generation and recycling performance.
Reporting Guidance	There is a guidance document on National Reporting for CSD18/19.
Reporting Responsibility	Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC)

Table 14 Global Methane Initiative

Agreement	Global Methane Initiative (formerly the Methane to Markets Partnership)	Date	Australian ratification	Founded October 2010
			Entry into force	Voluntary system with no commencement date
Purpose	An inter-government initiative designed to bring together countries, financial institutions, NGOs and private sector bodies with the aim of reducing climate change impacts by reducing methane emissions and promoting methane recovery. The initiative aims to spread knowledge and support other nations on work to reduce methane emissions from a number of specified sources including agriculture, coal mining, landfill, municipal wastewater and oil and natural gas sectors. It is an extension of the former Methane to Markets Partnership.			
Definitions/ Classifications	The initiative includes a focus on municipal waste management. There are no waste definitions specified in the Initiative.			
Waste Reporting requirements	There are no formal reporting requirements. Reporting on progress made in the reduction of methane emissions is undertaken but no formal reporting structure or mechanisms exist. The Global Methane Initiative secretariat publishes a landfill factsheet in which initiatives to promote reduction in landfill gas are summarised. Global Methane Initiative Sector Action Plans are required for which there is guidance on			



	<p>the data and information that is required. The proposed structure for the Action Plan is:</p> <ul style="list-style-type: none"> ■ Country background and overview of methane emissions ■ Overview of how methane emissions are managed by public/private sector ■ Challenges to mitigation or abatement of methane emissions ■ Activities to promote methane mitigation and abatement ■ Policy, market and legal drivers to promote methane project development ■ Country priorities.
Are reporting obligations defined in the agreement?	No formal reporting is specified.
Reporting Units	None specified
Reporting Frequency	None specified
Last Reported	Australia submitted a 'Landfill Gas Technical Subcommittee Country Specific Profile in April 2011 reporting on the status of Australia's landfills and landfill gas projects. Emissions of methane from solid waste disposal are reported in this document in Mt CO ₂ -e. This is taken from Australia's National Greenhouse Gas Inventory 2008.
Reporting Guidance	A Sector Action Plan guidance document is available.
Reporting Responsibility	Australia Department of Climate Change and Energy Efficiency Strategies and Coordination Division GPO Box 854, Canberra, ACT, 2601. Australia is represented on the Municipal Solid Waste Sub Committee.

2.3.1. Summary of Group 2 international reporting obligations

Rotterdam Convention

- There is a limited overlap with the Stockholm Convention, with both Conventions including the following chemicals: aldrin; chlordane; dichlorodiphenyltrichloroethane (DDT); dieldrin; endosulfan; heptachlor; hexachlorobenzene; alpha and beta hexachlorocyclohexane (HCH); lindane; toxaphene; hexabromobiphenyl and polychlorinated biphenyls (PCBs).
- This Convention does not apply to waste substances, so does not require waste reporting.

Waigani Convention

- The Waigani Convention is a multi-lateral agreement under the Basel Convention, and applies to the limited geographical area of the Pacific Forum Island countries.
- Although the scope is similar to the Basel Convention, it also includes a ban on the importing of radioactive waste materials by signatories.
- The Convention permits the export of Convention wastes to Australia or New Zealand for disposal/recovery.
- The Convention has reporting obligations for member countries that are similar to those set out in the Basel Convention and uses similar reporting forms, such as the Transmission of Information questionnaire. Reporting is to the Secretariat of the Pacific Region Environment Programme.
- Transboundary movements of wastes between Australia and signatory countries are reported by Australia to the Secretariat of the Waigani Convention and also through the Basel Convention reporting systems.



UN Commission on Sustainable Development (Agenda 21)

- The Commission on Sustainable Development was formed in 1992 after the Earth Summit in Rio de Janeiro. Agenda 21 is the international framework agreement for global sustainable development that was endorsed at the Rio Earth Summit by national governments, including Australia.
- Up until 2002 a national reporting cycle was in place. This was revised in 2003 and reporting is now based on the agreed, two year work programmes, the latest of which was CSD18/19 and included coverage of solid and hazardous waste management. These terms are not defined within the program.
- National reports are now to be provided on a voluntary basis on activity and progress in the order of the topics covered by the CSD work programmes. Alternatively case studies or good practice examples can be submitted. Waste management data is not required as part of this reporting, instead an overview of waste policies and practice is the focus.
- The UN issued a report on Trends in Sustainable Development – Chemicals, Mining, Transport and Waste Management in 2010 that used OECD data on waste generation.

Global Methane Initiative

- The Global Methane Initiative is a private – public sector partnership to reduce emissions of methane from a number of specified sources including agriculture, coal mining, landfill, municipal wastewater and oil and natural gas sectors. The membership includes nation states, financial bodies, private companies and NGOs which may work together to deliver methane emission reductions in their home countries or in others through a variety of means.
- There are no formal reporting requirements under the Global Methane Initiative, although plans for the reduction in emissions are required to be prepared and submitted along with periodic updates on their implementation.
- Reporting on progress made in the reduction of methane emissions is carried out but there is no formal reporting structure for doing this. The Global Methane Initiative secretariat publishes a landfill factsheet in which initiatives to promote reduction in landfill gas are summarised.
- Global Methane Initiative Sector Action Plans are requested for which there is guidance on the structure and content. Data on methane emissions from landfill, along with activities taken to mitigate emissions, are requested. Australia submitted a landfill gas country specific profile in 2011 (emissions of methane from solid waste disposal were reported in Mt CO₂-e). This information was taken from Australia's National Greenhouse Gas Inventory 2008.
- This initiative therefore complements work by the UNFCCC to reduce greenhouse gas emissions and draws on reporting by Australia through the National Greenhouse Gas Inventory.



2.4. Summary of Group 3 international obligations

The following six obligations are considered to fall into analysis Group 3 and their key elements are summarised below in Table 10. Further information on each Convention is also provided in Appendix B.

- The Antarctic Treaty.
- Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.
- International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk.
- Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances.
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the London Convention).
- Bilateral Agreement with East Timor on the Import of Hazardous Waste for Disposal in Australia.

Given that the six Conventions listed above are considered to be of lesser importance for the purposes of this project than the Group 1 and Group 2 obligations discussed above, the waste management aspects of the Group 3 Conventions are only described briefly in the following table.

Table 15 Primary purpose, waste management issues and reporting requirements of Group 3 obligations

Obligation	Primary purpose	Waste management issues	Reporting requirements/responsibilities
<i>Antarctic Treaty</i>	<p>All countries active in Antarctica should consult on the uses of the continent. The objectives of the treaty are:</p> <ul style="list-style-type: none"> ■ Antarctica shall be used for peaceful purposes only; military operations are not permitted on the continent. ■ The continued freedom for scientific investigation and research. ■ To promote international cooperation and transparency in science, that allows for readily available data and research results. ■ Prohibits nuclear tests and the disposal of radioactive waste. ■ Provides that any visits to the continent comply with the Treaty. ■ Sets aside disputes over territorial sovereignty. <p>Treaty parties meet on an annual basis. The following three international agreements have become part of the Treaty System:</p> <ul style="list-style-type: none"> ■ Convention for the Conservation of Antarctic Seals (1972) ■ Convention on the Conservation of Antarctic Marine Living Resources (1980) ■ Protocol on Environmental Protection to the Antarctic Treaty (1991). 	<p>Annex III of the Environmental Protection Protocol relates to waste management and the disposal of waste. Waste generated on Antarctica should be returned to the country whose activities generated the waste. Waste management plans for activities must be produced and reviewed annually.</p>	<p>The Australian Antarctic Division of the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) leads Australia's Antarctic program and is responsible for any waste reporting obligations, including production of the waste management plans.</p>
<i>Spent Fuel and Radioactive Waste Management</i>	<p>Covers spent fuel and radioactive waste from civilian nuclear reactors and applications, and from military or defence programs when transferred to and managed within civilian programmes. Also applies to controlled releases to the environment of liquids or gases from regulated nuclear facilities.</p>	<p>A national report is required along with an inventory of radioactive wastes. Information on waste facilities and fuel management facilities is required. Information must be provided for any facilities being decommissioned.</p>	<p>Australian Radiation and Protection and Nuclear Safety Agency (ARPANSA) co-ordinated the preparation of Australia's 4th National Report, which was due in October 2011. The information is not present on the IAEA website; however it is assumed that reporting was undertaken at this time.</p> <p>Reports are submitted to the Secretariat at the International Atomic Energy Agency.</p>
<i>International Code for the Construction and Equipment of Ships carrying Chemicals in bulk</i>	<p>The code covers the minimum standards for the construction of ships that are intended to carry chemicals in bulk. The aim is to control pollution should an accident occur at sea. The code is contained within Annex II of the MARPOL Convention on Marine Pollution.</p>	<p>No reporting is required, this code relates to a construction standard for ships carrying chemicals.</p>	<p>The Australian Maritime Safety Authority has responsibility for this International Code in Australia.</p>

Obligation	Primary purpose	Waste management issues	Reporting requirements/responsibilities
<i>Protocol on the Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances at Sea</i>	The Protocol requires a national system to be put in place that can respond to spillages of Hazardous and Noxious Substances (HNS) at sea. This includes a national contingency plan and equipment and training.	This Protocol does not specifically apply to waste, however waste or waste chemicals may fall within the remit of the Protocol.	The Australian Maritime Safety Authority (AMSA) manages the National Plan. National Emergency Response Arrangements are in place and a National Training Plan is co-ordinated by AMSA.
<i>Convention on Marine Pollution and Dumping (the London Protocol)</i>	Aims to prevent the uncontrolled dumping of waste at sea. Some dumping is allowed for specified wastes. A permit system is required to allow dumping under the protocol.	The <i>Environment Protection (Sea Dumping) Act 1981</i> (the Sea Dumping Act) fulfils Australian obligations under the London Protocol.	In Australia, the London Protocol is administered by the Department of Sustainability, Environment, Water, Population and Communities (DSEWPac) which will also be responsible for meeting any reporting requirements under this Convention.
<i>Bilateral agreement with East Timor on the import of hazardous waste</i>	This bilateral agreement was put in place so that hazardous waste from East Timor can be imported to Australia for disposal/recovery.	Hazardous waste is managed in accordance with the Basel Convention requirements through the Bilateral Agreement.	Reporting requirements for Australia will be the same as for the Basel Convention and any waste imported from East Timor will be reported in the Basel Convention reporting cycle and forms. The Department of Sustainability, Environment, Water, Population and Communities (DSEWPac) is responsible for reporting.



2.5. Discussion of international obligations

This section considers the obligations in terms of their key waste reporting elements, comparing the types of data requested, definitions, classifications, timing and frequency of reporting and data sources and quality issues. Key similarities, differences, and gaps are then considered. A summary comparison of the main waste reporting requirements for each of the G1 and G2 obligations is also provided in Table 16 and 17 in order to summarise the key information needed and the frequencies of reporting. Implications for state and territory reporting are discussed in Section 4.

Waste reporting requirements vary between the obligations in that for some they are set out in the official text of the obligations themselves, with regular reporting cycles and specific data needs being identified. The best example of this is for the Basel Convention which has its general and annual reporting obligations set out in the Convention text: specifying the reporting frequency, the reporting period, the datasets that are required, and the waste definitions that are to be used. Other obligations such as the OECD Waste Indicator Reporting are no less onerous in terms of the amount of data that is requested, but the requirements with regard to reporting arrangements are not specified in the text of the top-level Convention or agreement.

Data requirements

The OECD Waste Indicator Reporting and Basel Convention reporting require the largest range of waste data sets, both also having detailed waste data collection questionnaires to make sure that information is collected in a consistent format. This assists the process of reporting and allows data between years to be easily manipulated and verified. Waste data is typically collected and reported in tonnes for both of these obligations. Municipal waste generation information is also expressed by the OECD in terms of kg or kg per capita. Kyoto reporting on emissions of greenhouse gases from waste sources expresses this in tonnes of CO₂ equivalent which must be calculated using agreed conversion factors.

Performance data on recycling rates is typically expressed as a percentage of waste arisings for OECD publications, or total recycling in tonnes, and is also broken down by specific waste streams. The OECD also requests waste composition data for municipal waste.

The Basel Convention requests information on disposal and treatment/recovery facilities, in terms of the number and capacity of facilities and the tonnage throughput. The Global Methane Initiative refers only to landfill. The Kyoto Protocol requests information on CO₂ emissions from waste operations. This information is linked to the amount of waste handled by these facilities.

The Stockholm Convention requests data via an online survey and chemical specific questionnaires.

Reporting systems and data requirements are clearest where there are dedicated data collection forms, as in the case of the Basel Convention and the OECD waste indicator reporting.



Definitions and classifications

The key terms used in the obligations are hazardous waste, municipal, household and industrial waste. Recovery and disposal operations are also defined within the OECD and Basel Convention systems and include a wide range of operations. The Basel Convention and OECD use R codes for recovery (R1-13) and D codes for disposal (D1-15) that are defined in the European Union's Waste Framework Directive⁴.

The following definitions and classifications are used (mostly drawn from the OECD indicators reporting):

Hazardous waste is defined according to a detailed classification system based on the waste having certain hazardous characteristics (H codes), belong to certain waste categories (Y1-45), along with waste considered to be hazardous under domestic legislation.

Municipal waste includes household waste and similar waste. The OECD definition also includes:

- bulky waste (e.g. white goods, old furniture, mattresses)
- yard waste, leaves, grass clippings, street sweepings, the content of litter containers, and market cleansing waste, if managed as waste.

It includes waste originating from:

- households
- commerce and trade, small businesses, office buildings and institutions (schools, hospitals, government buildings).

It also includes:

- waste from selected municipal services, i.e. waste from park and garden maintenance, waste from street cleaning services (street sweepings, the content of litter containers, market cleansing waste), if managed as waste.

It includes waste from these sources collected:

- door-to-door through traditional collection (mixed household waste), and fractions collected separately for recovery operations (through door-to-door collection and/or through voluntary deposits).

Industrial waste generation is defined by the source of waste production, which is linked back to the relevant industrial sectors that generate the waste. These are based on the International Standard Industrial Classification system.

Household waste is waste from households as well as other waste, which, because of its nature or composition, is similar to waste from households.

⁴ Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 on Waste.



The amount of hazardous/non-hazardous waste sent to various recovery or disposal operations is also of interest to more than one obligation: primarily the Basel Convention and the OECD agreements. Hazardous waste management is a theme in the most recent Agenda 21 theme cycle which covered solid waste management and hazardous waste.

Hazardous waste and disposal/recovery definitions are generally consistent between the obligations (e.g. the Basel Convention, the OECD agreements, and the Waigani Convention). Municipal, household and industrial waste streams are primarily of interest to the OECD in terms of waste indicator reporting. OECD datasets have also been used in a UN publication that reported on trends in waste, transport, chemical and mining⁵.

Where waste is the primary focus of the agreements, such as the Basel Convention and OECD Waste Recovery System, definitions for the waste terminology used are contained within the Convention texts. Others such as the Stockholm Convention and Kyoto Protocol do not define waste or waste management activities in as much detail, e.g. waste sources in the Kyoto Protocol are listed but not defined. Solid waste is a common term used in documentation without there being a clear definition.

Timing and frequency of reports

The primary reporting frequencies are: annual for the Basel Convention, OECD (including the Annual Quality Assurance Questionnaire), Kyoto Protocol, and the Waigani Convention; biennial for the preparation and release of the OECD State of the Environment Report; and every four years for the Article 15 reporting under the Stockholm Convention. For these obligations similar information is requested on each occasion. The biggest overlap in data is the hazardous waste generation and import/export information shared between the Basel Convention and OECD Waste Indicator Reporting. Information on household waste generation is also requested by both obligations.

Other obligations such as Agenda 21 have two yearly reporting cycles, but information requirements are different for each cycle, limiting opportunities for combining datasets. Reporting periods are generally on a calendar year basis (January – December) which may not necessarily correspond to financial year reporting for municipal and household waste streams at state and territory levels.

Australia reports regularly to the Basel Convention and OECD, though there is usually a delay in publishing this data on the secretariat's websites and in environmental reports. The most recent OECD publications (2011 reports) contain waste data for 2009, whereas the Basel Convention's secretariat is currently reporting datasets from 2009.

⁵ Trends in Sustainable Development, Chemicals, Mining, Transport and Waste Management, UN 2010



Data quality and sources

Data quality is influenced by reporting systems, procedures and methods and whether validation/verification of data is undertaken. The Basel Convention and OECD waste indicator reporting have standard reporting forms which should make data collection easier. However, some of the reporting forms for Australia submitted for both the Basel Convention and OECD reporting that have been reviewed during this study have not always contained the full data sets that were required, or the information provided for a given year has not always been accurate: e.g. some of the data for the State of the Environment questionnaire for 1992 was for a financial year, not a calendar year, and related to one Australian state and not all states and territories. Moreover, the Basel Convention forms that have been reviewed do not contain information on the total amount of hazardous waste generated in Australia.

Verification of OECD waste indicator reporting data is carried out by the OECD Secretariat in consultation with the Australian Government. If data from either of the State of the Environment or Annual Quality Assurance questionnaires is to be used for an environmental publication then relevant entries are checked with the Australian Government.

The national level data reported to meet international obligations relies on state and territory reporting systems to provide much of the data and have transparency in waste definitions, waste sources and regular reporting cycles. These issues are discussed in Section 4.

National level reporting currently relies on collating state and territory level data as there is no national database that could accept, hold and release this data. National reporting would be made easier if the state and territory information was held in one place, was available in the same format, covered the same period of time, and presented the same information, including having nationally consistent definitions and classifications for waste. These issues are discussed in Section 4.

Areas of reporting overlap

Key areas of overlap relating to reporting obligations are found in Group 1 and in particular in relation to reporting on how hazardous waste is managed in Australia, the amount generated and also imported and exported.

Hazardous waste information gathered for Basel Convention reporting can also be used for some OECD reporting. Where the information relates to Stockholm chemicals then there is some commonality between import and export of hazardous chemicals reported for the Basel Convention.

The OECD general reporting requirements (see Table 8 OECD Waste Indicators and Information) are the most varied, cover the widest range of waste streams and are thus potentially the more complicated to collate from state and territory level information.

Table 16 Summary of some of Australia's waste-related reporting obligations

International Obligation	Basel Convention	Stockholm Convention	OECD Waste Indicator Reporting	OECD Waste Recovery System	Kyoto Protocol (UNFCCC)	Rotterdam	Waigani	UN Agenda 21	Global Methane Initiative
Are waste reporting requirements defined in the obligation?	Yes	Yes	No	No	Yes	No, waste is specifically excluded	Yes	Ad hoc (depending on CSD reporting cycle)	No
Primary waste terms used	Hazardous waste, transboundary movement, disposal, recovery, other waste (Y46 (household waste), Y47 (residues from the incineration of household waste))	Waste is not defined, convention chemicals only	Waste, hazardous waste, non-hazardous waste, transboundary movement	Key waste indicators are municipal industrial, hazardous, and radioactive	Waste sources are defined as solid waste disposal on land, wastewater handling, waste incineration, other	None	As Basel Convention	Solid waste, hazardous waste	Landfill
Waste Definitions provided	Yes in the Convention text	N/a	Yes in the Convention text	Yes in data collection forms	Waste sources only	N/a	Yes in the Convention text	Terms are not specifically defined	No
Reporting requirements									
Frequency	Annual	Four yearly for Article 15 reports; others ad-hoc	Annual and Biennial	As required by waste movements	Annual	N/a	Annual	Annual up to 2002, since then based on CSD topic cycles	None
Period covered	Calendar year	Period from 1 Jan 2006 to Dec 2009 (Article 15 reports)	Calendar year	As required by waste movements	Calendar, up to two years from date of submission	N/a	Calendar year	Two yearly cycles	None
Last reported	2011 for 2009	Feb 2011, next report 2014 (Article 15 reports)	2011 for annual report and 2010 for biennial report	As required by waste movements	2011 for 2009	N/a	2011 for 2009	2009 (not on waste issues)	Landfill Action Plan in 2011

Table 17 Key content under some of Australia's international waste-related reporting obligations, mapped against some individual obligations

Key content	International waste-related reporting obligation					
	Basel Convention	Stockholm Convention	OECD (Includes indicators. OECD Control System reports via Basel)	UNFCC & Kyoto Protocol	UN Agenda 21	Global Methane Initiative
Action taken to minimise the generation of waste	✓		✓		✓	
Disposal/recovery facilities operated, including capacity	✓		✓	✓	✓	✓
Total amount of waste generated	✓*		✓			
Amount of waste imported / exported	✓		✓			
Action taken to minimise the generation of hazardous waste	✓	✓	✓		✓	
Total amount of hazardous waste generated	✓	✓	✓			
Total amount of hazardous and other waste generated, by type	✓		✓		✓	
Total amount of hazardous waste imported/exported	✓	✓	✓			
Amount of hazardous waste and other waste sent to recovery and disposal	✓	✓	✓	✓		
Municipal waste generated	✓		✓			
Amount of municipal waste destined for treatment, disposal and recovery	✓		✓			
Generation of waste by industry sector			✓			
Amount of waste generated, recovered, recycled by waste stream (eg C&D) or product (eg WEEE)		✓	✓	✓		
Amount of non-hazardous waste going for recycling, composting, incineration or landfill disposal			✓			
Split of municipal waste from household and other municipal wastes	✓		✓			
Waste to landfill, wastewater & waste incineration related emissions of greenhouse gas				✓		✓

Note: OECD requirements also extend to reporting against collection type (traditional collection, separated collection, bulky) and composition of municipal waste (which is also an input requirement for UNFCC/Kyoto Protocol reporting across waste streams). Reporting to the United Nations Environment Programme, other than Agenda 21, has not been included. Antarctic, marine and radioactive waste-related obligations are also not included. Some of this content is specified in the head-text of the Treaty, Convention or other agreement, while others are the product of subsequent decisions by the Parties or Secretariats. * Basel's coverage of total waste generation extends to hazardous wastes, mixtures with hazardous waste, household wastes and some waste residues.



3. National legislation and arrangements for the management and reporting of wastes

This section describes the legislative and other arrangements that have been implemented within Australia at the national level for the management and reporting of wastes in accordance with waste-related international obligations. This section contains some descriptions of systems for hazardous waste management, as this content assists in making clearer how data is collected, reported and disclosed. National waste reporting exercises, such as through the *Waste and Recycling in Australia* series of reports or the *National Waste Report*, which do not have a direct link to a legislative requirement are not addressed.

The principal national legislation and other arrangements that have been adopted to give effect to the Group 1 international obligations described above are discussed in section 3.1 below. Given the importance of the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* in implementing the Basel Convention (and other conventions), a detailed discussion of this Act is given in section 3.2.

Section 3.3 describes the *National Environmental Protection (Movement of Controlled Waste between the States and Territories) Measure* (Controlled Waste NEPM). Although the Controlled Waste NEPM does not have any statutory relationship to the Group 1 international obligations, a discussion of the NEPM is included here as it provides an example of a mechanism that is currently used for tracking and reporting movements of controlled waste between states and territories. NEPM categories and codes/classifications are also significant regarding what data is collected on hazardous waste.

Section 3.4 discusses how the Group 2 international obligations are addressed at a national level; and similar consideration is given to the Group 3 international obligations in section 3.5.

Section 3.6 summarises the findings of this study in respect of national arrangements for managing and reporting wastes.

3.1. National arrangements for Group 1 international obligations

3.1.1. The Basel Convention

The Basel Convention is implemented by the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*; and the *Hazardous Waste (Regulation of Exports and Imports) Regulations 1996*. A detailed consideration of the requirements of the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* is given in section 3.2 below together with a description of the tracking and reporting arrangements for the wastes covered under the Act.



3.1.2. The Stockholm Convention

There is no single piece of legislation addressing the requirements of the Stockholm Convention on Persistent Organic Pollutants (POPs). Twenty two chemicals and their wastes are currently covered by the Convention although Australia is yet to ratify ten of these at the time of writing. The 22 chemicals include industrial chemicals, pesticides and/or unintentionally produced by-products. The Australian Government regulates industrial chemicals through the National Industrial Chemicals Notification and Assessment Scheme (NICNAS) which administers the *Industrial Chemicals (Notification and Assessment) Act 1989*. Pesticides are regulated through the Australian Pesticides and Veterinary Medicines Authority (APVMA). NICNAS and the APVMA determine which chemicals can be legally used in Australia and under what conditions. Additional controls on imports and exports of chemicals exist in the Customs (Prohibited Exports) Regulations 1958, Customs (Prohibited Imports) Regulations 1956 and the Agricultural and Veterinary Chemicals (Administration) Regulations 1956. Additional controls on wastes exist in the National Strategy for the Management of Scheduled Waste and various state and territory legislation. Controls also exist in relation to workplace chemicals, the transport of chemicals, chemicals of security concern, poisons, pharmaceuticals, chemicals in food and consumer safety. Unintentionally produced chemicals covered by the Convention (eg dioxins) are mostly addressed through state and territory legislation.

3.1.3. OECD Waste Indicator Reporting

With regard to the OECD Waste Indicator Reporting obligations, these are not covered by any specific federal legislation. It is understood that the information for reporting waste generation in terms of municipal, industrial, hazardous and nuclear waste is currently drawn from a variety of data sources – which can include the Online System for Comprehensive Activity Reporting (OSCAR) – a web-based data tool for corporations to record energy and emissions data for government program reporting (see section 3.1.5 for a discussion of OSCAR); the National Pollutant Inventory; the National Waste Reports; and ad hoc reports prepared by federal, state and territory governments; and industry associations (including the Waste Management Association of Australia).

3.1.4. OECD Control System for Waste Recovery

The reporting requirements of the OECD Control System for Waste Recovery are addressed through Article 11 of the *Hazardous Waste (Regulation of Imports and Exports) Act 1989* and the Hazardous Waste (Regulation of Exports and Imports) (OECD Decision) Regulations 1996. Thus waste tracking and reporting arrangements are covered by the *Hazardous Waste (Regulation of Imports and Exports) Act 1989*. However, it is understood that the reporting of international movements of waste for recovery are complicated by considerations of the physical state of the material i.e. whether the waste constitutes discarded items in their original state (e.g. computer monitors or TV sets); disassembled components; or whether the material is more clearly identifiable as waste on the basis of its composition or source.

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3.1.5. UN Framework Convention on Climate Change and the Kyoto Protocol

The reporting requirements of the UN Framework Convention on Climate Change and the Kyoto Protocol are addressed through the *National Greenhouse Gas Inventory Act 1997* and the *National Greenhouse and Energy Reporting Act 2007* (NGER Act). The NGER Act provides a national framework for corporations to report information related to greenhouse gas emissions, energy consumption and energy production. Corporations that meet any of the NGER Act reporting thresholds may have reporting obligations under the NGER Act.

Reporting for landfill operators is done using the Online System for Comprehensive Activity Reporting (OSCAR) in conjunction with the NGER Solid Waste Emissions Calculator Tool. The Waste Tool is a separate Microsoft Excel tool for estimation of greenhouse gas emissions from solid waste disposed at landfills. The Waste Tool calculates emissions from the methane component of landfill gas, which results from solid waste disposed over its lifetime. Once landfill emissions have been determined for the landfill facility using the Waste Tool, the results are entered into OSCAR for reporting purposes.

The Waste Tool does not facilitate reporting of methane emissions from the following activities, which must be reported separately in OSCAR:

- Landfill gas capture (energy production)
- Landfill gas flaring (energy consumption / emissions)
- Landfill gas combustion for producing other energy commodities e.g. electricity / steam (energy consumption / emissions)
- Production of energy commodities e.g. electricity / steam from landfill gas (energy production)
- Consumption of these energy commodities (energy consumption)
- Consumption of other energy commodities e.g. diesel, imported electricity (energy consumption / emissions)
- Biological treatment of solid waste (emissions)
- Waste incineration (energy consumption / emissions).

3.2. The Hazardous Waste (Regulation of Exports and Imports) Act 1989

The Australian Government implements the Basel Convention through the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* and its amendments, and the associated *Hazardous Waste (Regulation of Exports and Imports) Regulations 1996*. The object of the Act and regulations is to regulate the export, import and transit of hazardous waste to ensure that exported, imported or transited waste is managed in an environmentally sound manner so that human beings and the environment, both within and outside Australia, are protected from the harmful effects of the waste.



The aims of the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* are:

- (a) To give effect to the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal; and
- (b) To give effect to agreements and arrangements of the kind mentioned in Article 11 of the Basel Convention (i.e. bilateral, multilateral and regional agreements and arrangements).

The Act defines waste as a substance or object that:

- (a) Is proposed to be disposed of; or
- (b) Is disposed of; or
- (c) Is required by a law of the Commonwealth, a State or a Territory to be disposed of.

Under the Act, disposal means an operation specified in Annex IV of the Basel Convention, which includes:

- (a) Operations which do not lead to the possibility of resource recovery, recycling, reclamation, direct re-use or alternative uses; and
- (b) Operations which may lead to resource recovery, recycling, reclamation, direct re-use or alternative uses.

Thus under the Act, 'disposal' effectively covers all of the typical options for disposing of waste (including landfill, and incineration without energy recovery); and treating waste (including re-use, recycling and recovery operations).

Under the Act, hazardous waste means:

- (a) Waste prescribed by the regulations where the waste has any of the characteristics mentioned in Annex III to the Basel Convention; or
- (b) Waste covered by paragraph 1(a) of Article 1 of the Basel Convention; or
- (c) Household waste; or
- (d) Residues arising from the incineration of household waste.

The Act does not include wastes covered by paragraph 4 of Article 1 of the Basel Convention (i.e. waste from ships).

In addition, section 4A of the Act provides for an extended meaning of hazardous waste in respect of the following:

- (a) A case where a foreign country has classified a particular substance or object as hazardous waste
- (b) A case where a foreign country has classified waste collected from households as hazardous waste.

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Section 4F of the Act also provides for an extended meaning of hazardous waste where this relates to substances or objects subject to notification or control under Article 11 arrangements (i.e. bilateral, multilateral and regional agreements and arrangements).

Thus the Act explicitly includes a wider range of wastes than are directly mandated as hazardous wastes under the Basel Convention, in that the Act specifies household waste and the residues of incineration of household waste as hazardous wastes; whereas the Basel Convention lists wastes from these sources in Annex II as 'wastes requiring special consideration'. Whilst other signatories to the Basel Convention manage Annex II wastes on a case-by-case basis, the Australian Government has adopted a blanket arrangement for Annex II wastes. The rationale for this appears to be based upon the fact that household waste (and subsequently any residues from its incineration) can contain materials with hazardous properties (e.g. batteries, household chemicals, etc).

By comparison, the United Kingdom Government considers household waste to be generally non-hazardous for reporting purposes under the Basel Convention, and considers the hazardous content of such waste to be *de minimis*. However, in recent years additional control measures and management arrangements for certain types of hazardous household waste types (for example waste electrical and electronic equipment, batteries, etc) have been introduced in the United Kingdom under producer responsibility arrangements, and householders are now required to dispose of such waste via recycling and disposal schemes provided by municipalities and/or industry.

A similar approach is now being adopted in Australia following the commencement of the *Product Stewardship Act 2011*. In particular the National Television and Computer Recycling Scheme is a combination of government regulation and industry action to take responsibility for the collection and recycling of waste televisions, computers, printers and computer products. Much of this material is currently exported from Australia for reprocessing overseas, and such movements may or may not require a permit under the Basel Convention depending upon the state of the material (e.g. whether the equipment is whole, has been disassembled, or is classified as waste). Such waste may be classified under Annexes I and II of the Basel Convention, or under other categories of hazardous waste such as in Annex VIII (A1180) and IX (B1110).

The practical consequence of designating household waste (and residues from its incineration) as hazardous waste is that the Australian Government needs to be cognisant of the generation of these wastes, and the arrangements for their management within each and every state or territory within Australia. Thus the Australian Government is therefore heavily reliant upon the receipt of information in these respects from state and territory governments and their agencies. This is discussed further in section 4.0 below.



In respect of international movements of hazardous wastes (as defined under the Act), the Australian Government (DSEWPaC) administers a notification and permit system under the Act and regulations for waste imports, exports and movements. The permit arrangement provides a direct source of information on international movements of hazardous waste for reporting purposes under the Basel Convention. Nevertheless the permit system does not provide a mechanism for capturing information in respect of the generation, management and tracking of hazardous waste (as defined under the Act), nor does it provide information on the movement of such waste within or between states and territories.

3.3. Movement of Controlled Waste NEPM

Within Australia, the movement of hazardous waste across state and territory boundaries is controlled through the *National Environmental Protection (Movement of Controlled Waste between States and Territories) Measure* (Controlled Waste NEPM). The Controlled Waste NEPM was made under the provisions of the *National Environment Protection Council Act 1994* and provides a national framework for developing and integrating state and territory systems for the management of the movement of controlled waste between states and territories originating from commercial, trade, industrial or business activities. These management systems include:

- Tracking systems which provide information to assist agencies and emergency services, and ensure that controlled wastes are directed to and reach appropriate facilities
- Prior notification systems which provide participating states and territories with access to information, to assess the appropriateness of proposed movements of controlled wastes in terms of transportation and a facility selection process
- The licensing and regulation of generators, transporters and facilities so that tracking and notification functions are compatible with participating state and territory requirements.

The Controlled Waste NEPM is intended to relate to the movement of wastes between states and territories within Australia, and is not intended to have any direct link to Australia's international rights or obligations with respect to the international movement of waste⁶. Thus the Controlled Waste NEPM does not have any direct, statutory relationship to the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* or the Basel Convention.

However, data collected by states and territories on movements of hazardous waste across state borders, combined with data collected about intrastate movements, could be used as a proxy to better-satisfy reporting requirements under the Basel Convention for the amount of hazardous waste generated. The Controlled Waste NEPM does not track movements of household waste, so it cannot satisfy the requirements to report on household waste generation. This information would need to be gathered from other sources.

⁶ *National Environment Protection (Movement of Controlled Waste between States and Territories) Measure as Varied November 2010*, p. 4.
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The Controlled Waste NEPM requires that each participating state or territory should ensure that records of the data generated by the tracking system are kept for a period of not less than 12 months. Moreover, each participating state and territory should provide collated summary information on the:

- (i) Movement of controlled waste into each jurisdiction, indicating jurisdiction of origin, waste code and quantity of waste
- (ii) Level of discrepancies (e.g. non-arrival of a consignment) as a percentage of total authorised controlled waste movements
- (iii) Benefits arising from the implementation of the Measure.

Under the Controlled Waste NEPM, waste is defined as any

- (a) Discarded, rejected, unwanted, surplus or abandoned matter; or
- (b) Otherwise discarded, rejected, unwanted, surplus or abandoned matter intended for:
 - (i) Recycling, reprocessing, recovery, reuse, or purification by a separate operation from that which produced the matter; or
 - (ii) Sale, whether of any value or not.

Thus the designation of what is waste under the Controlled Waste NEPM is broadly consistent with the definition of waste under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* in that it applies to materials that are surplus, or are to be discarded, irrespective of whether they will be subject to some form of recovery process (including re-use, recycling or energy recovery), or whether they have any value or not.

The Controlled Waste NEPM does not make any explicit reference to the disposal of waste. Nevertheless, Part 3 of the Controlled Waste NEPM directs that when considering a completed application for a consignment authorisation, each participating state or territory should take into consideration any relevant environmental protection policies and legislation of participating jurisdictions which will assist in meeting the desired environmental outcomes, including the policies and legislation relating to the generation, transport, treatment or disposal of controlled waste.

Under the Controlled Waste NEPM 'controlled waste' is defined as any waste in List 1 of Schedule A of the NEPM provided that the waste possesses one or more of the characteristics in List 2 of Schedule A of the NEPM. Unless otherwise demonstrated to the satisfaction of the nominated agency in the jurisdiction of destination, wastes in List 1 are considered to possess one or more characteristics in List 2.



List 2 of Schedule A comprises a list of characteristics of controlled wastes (hazard properties) that are derived from UN codes and classes which correspond to the UN Class and Code hazard classification system included in the United Nations Recommendations on the Transport of Dangerous Goods as used in Australia. The list of characteristics of controlled waste contained in List 2 of Schedule A is identical to the list of hazardous characteristics that are given in Annex III of the Basel Convention.

Table 18 below reproduces the waste categories that comprise List 1 of Schedule A of the Controlled Waste NEPM together with the equivalent Basel Convention waste stream codes. List 1 of Schedule A includes additional controlled waste categories not included in Annex 1 of the Basel Convention.

Moreover, the Controlled Waste NEPM does not include all of the wastes covered by the Basel Convention and the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* in that the NEPM does not require reporting of movements of household waste (or any hazardous fractions from this waste source). Furthermore, reporting under the Controlled Waste NEPM does not extend to waste generated, treated or disposed of within a state (though states and territories may use arrangements established under the Controlled Waste NEPM to track movements of List 1 wastes within a state or territory – see section 4 below).

The degree to which state and territory classifications of hazardous (or similar) wastes map against those listed in Schedule A of the Controlled Waste NEPM (and the Basel Convention) is discussed in section 4 below. The 'NEPM Codes' below do not appear in the NEPM itself, but come from NSW guidance documents that themselves are based on Victorian guidance, which was drawn from older ANZECC Ministerial Council materials.

Table 18 Comparison of NEPM List 1 wastes with the Basel Convention wastes

NEPM Schedule A List 1 Waste Categories	NEPM Code	Basel Convention Waste Stream Codes
Acidic solutions or acids in solid form	B100	Y34
Animal effluent and residues (abattoir effluent, poultry and fish processing waste)	K100	
Antimony; antimony compounds	D170	Y27
Arsenic; arsenic compounds	D130	Y24
Asbestos	N220	Y36
Barium compounds (excluding barium sulphate)	D290	
Basic solutions or bases in solid form	C100	Y35
Beryllium; beryllium compounds	D160	Y20
Boron compounds	D310	
Cadmium; cadmium compounds	D150	Y26
Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos	N230	
Chlorates	D350	

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NEPM Schedule A List 1 Waste Categories	NEPM Code	Basel Convention Waste Stream Codes
Chromium compounds (hexavalent and trivalent)	D140	Y21
Clinical and related wastes	R100	Y1
Cobalt compounds	D200	
Containers which are contaminated with residues of substances referred to in this list	N100	
Copper compounds	D190	Y22
Cyanides (inorganic)	A130	Y33
Cyanides (organic) / nitriles	M210	Y38
Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list	N160	Y18
Ethers	G100	Y40
Filter cake contaminated with residues of substances referred to in this list	N190	
Fire debris and fire washwaters	N140	
Fly ash, excluding fly ash generated from Australian coal-fired power stations	N150	
Grease trap waste	K100	
Halogenated organic solvents	G150	Y41
Highly odorous organic chemicals (including mercaptans and acrylates)	M260	
Inorganic fluorine compounds excluding calcium fluoride	D110	Y32
Inorganic sulfides	D330	
Isocyanate compounds	M220	
Lead; lead compounds	D220	Y31
Mercury; mercury compounds	D120	Y29
Metal carbonyls	D100	Y19
Nickel compounds	D210	
Non toxic salts	D300	
Organic phosphorus compounds	H110	Y37
Organic solvents excluding halogenated solvents	G110	Y42
Organohalogen compounds - other than substances referred to in this list	M160	Y45
Oxidising agents	E100	
Perchlorates	D340	
Phenols, phenol compounds including chlorophenols	M150	Y39
Phosphorus compounds excluding mineral phosphates	D360	
Polychlorinated dibenzo-furan (any congener)	M170	Y43
Polychlorinated dibenzo-p-dioxin (any congener)	M180	Y44
Reactive chemicals	T200	
Reducing agents	Z120	
Residues from industrial waste treatment / disposal	N205	Y18

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NEPM Schedule A List 1 Waste Categories	NEPM Code	Basel Convention Waste Stream Codes
operations		
Selenium; selenium compounds	D240	Y25
Soils contaminated with a controlled waste	N120	
Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	M250	
Tannery wastes (including leather dust, ash, sludges and flours)	K140	
Tellurium, tellurium compounds	D250	Y28
Thallium; thallium compounds	D180	Y30
Triethylamine catalysts for setting foundry sands	M230	
Tyres	T140	
Vanadium compounds	D270	
Waste chemical substances arising from research and development or teaching activities including those which are not identified and/or are new and whose effects on human health and/or the environment are not known	T100	Y14
Waste containing peroxides other than hydrogen peroxide	E100	
Waste from heat treatment and tempering operations containing cyanides	A110	Y7
Waste from the manufacture, formulation and use of wood-preserving chemicals	H170	Y5
Waste from the production, formulation and use of biocides and phytopharmaceuticals	H100	Y4
Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	F100	Y12
Waste from the production, formulation and use of organic solvents	G160	Y6
Waste from the production, formulation and use of photographic chemicals and processing materials	T120	Y16
Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	F110	Y13
Waste from the production and preparation of pharmaceutical products	R140	Y2
Waste mineral oils unfit for their original intended use	J100	Y8
Waste of an explosive nature not subject to other legislation	E120	Y15
Waste oil/water, hydrocarbons/water mixtures or emulsions	J120	Y9
Waste pharmaceuticals, drugs and medicines	R120	Y3
Waste resulting from surface treatment of metals and plastics	A100	Y17
Waste tarry residues arising from refining, distillation, and any pyrolytic treatment	J160	Y11
Waste, substances and articles containing or contaminated	M100	Y10

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NEPM Schedule A List 1 Waste Categories	NEPM Code	Basel Convention Waste Stream Codes
with polychlorinated biphenyls (PCBs), polychlorinated naphthalenes (PCNs), polychlorinated terphenyls (PCTs) and/or polybrominated biphenyls (PBBs)		
Wool scouring waste	K190	
Zinc compounds	D230	Y23

For reporting purposes the waste categories listed in Schedule A of the Controlled Waste NEPM are consolidated in the NEPM annual reports to 15 main categories, as presented in Table 19 below. Public reporting in the Controlled Waste NEPM Annual Report is only against these 15 high-level summary categories. There is no public NEPM reporting against the full set of NEPM or Basel codes. These 15 high-level summary categories do not appear in the text of the NEPM, the national hazardous waste legislation or the Basel Convention.

Table 19 Consolidated Waste Categories that are used for NEPM Annual Reporting Purposes

NEPM Category	Description
A	Plating and heat treatment
B	Acids
C	Alkalis
D	Inorganic chemicals
E	Reactive chemicals
F	Paints, resins, inks, organic sludges
G	Organic solvents
H	Pesticides
J	Oils
K	Putrescibles / organic wastes
L	Industrial wash water
M	Organic chemicals
N	Soil / sludge
R	Clinical and pharmaceutical
T	Misc.

3.4. Group 2 international obligations

In section 2 above the Group 2 international obligations are identified as:

- The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
- The Waigani Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal
- The United Nations Commission on Sustainable Development (including Agenda 21)

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- The Global Methane Initiative.

3.4.1. Rotterdam Convention

The Rotterdam Convention covers shared responsibility and information sharing in relation to hazardous chemicals, contributes to the environmentally sound use of these chemicals, and provides a national decision making process regarding their import and export.

The exclusion of waste from the scope of the Convention means that reporting requirements do not extend to wastes containing chemicals designated under the Convention; thus no legislative arrangements exist at the federal level in respect to waste reporting in the context of the Convention.

3.4.2. Waigani Convention

The Waigani Convention is a multi-lateral agreement under Article 11 of the Basel Convention. Hazardous wastes and their transboundary movement are defined under Article 2 of the Convention, but these definitions are identical to those given under the Basel Convention.

Imports of wastes covered by the Convention into Australia from Forum Island Countries should be captured through existing Basel Convention reporting arrangements (as specified under the federal *Hazardous Waste (Regulation of Exports and Imports) Act 1989* and reported to the Basel Convention secretariat through the annual Transmission of Information Forms.

3.4.3. United Nations Commission on Sustainable Development (including Agenda 21)

Agenda 21 is an international framework agreement for pursuing global sustainable development that was endorsed by national governments, including Australia, at the 1992 Rio Earth Summit. Chapter 19 of Agenda 21 relates to the Rotterdam Convention, Chapter 20 requires signatory nations to become signatories to the Basel Convention, and Chapter 21 covers the environmentally sound management of solid waste and sewage related issues. Annual reporting in respect of Agenda 21 issues was discontinued in 2002. Since 2002, national reports are only required with regard to the themes of each cycle of the Commission on Sustainable Development (CSD). CSD Cycle 18/19 (covering the period May 2010 to 2011) included a focus on waste management including hazardous and solid waste. Reporting by national governments is on a voluntary basis. This study has not been able to find evidence that Australia reported in respect of CSD Cycle 18/19.

In respect of other UN CSD reports, the UN produced a report on Trends in Sustainable Development – Chemicals, Mining, Transport and Waste Management 2010-2011 which drew upon OECD data sets for waste generation and recycling performance.



3.4.4. Global Methane Initiative

Although the Global Methane Initiative includes a focus on municipal waste management, the Initiative has no formal reporting requirements. However, it is understood that Australia submitted a Landfill Gas Technical Subcommittee Country Specific Profile in April 2011 which describes the status of Australia's landfills and landfill gas projects. It is understood that this report used information on emissions of methane from solid waste that was taken from Australia's National Greenhouse Gas Inventory 2008.

3.5. Group 3 international obligations

In section 2, the Group 3 international obligations are identified as:

- The Antarctic Treaty
- Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management
- International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
- Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention)
- Bilateral Agreement with East Timor on the Import of Hazardous Waste for Disposal in Australia.

3.5.1. The Antarctic Treaty

Annex III of the Environmental Protection Protocol to the Antarctic Treaty relates to waste management and the disposal of waste. Waste generated on Antarctica should be returned to the country whose activities generated the waste. Waste management plans for activities must be produced and reviewed annually. The Australian Antarctic Division of the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) leads Australia's Antarctic program and any waste reporting obligations, including the production of the waste management plans.

3.5.2. Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

The Joint Convention covers spent fuel and radioactive waste from civilian nuclear reactors and applications and from military or defence programs when transferred to and managed within civilian programs.



A national report is required together with an inventory of radioactive wastes. Information on waste facilities and fuel management facilities is also required. This work is undertaken by the Australian Radiation and Protection and Nuclear Safety Agency (ARPANSA).

3.5.3. International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

The code covers the minimum standards for the construction of ships that are intended to carry chemicals in bulk.

No waste-related reporting is required under this Code.

3.5.4. Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances

The Protocol requires a national system to be put in place that can respond to spillages of hazardous and noxious substances at sea. This Protocol does not specifically apply to waste, however waste or waste chemicals may fall within the remit of the Protocol.

The Australian Maritime Safety Authority (AMSA) manages a national contingency plan under the Protocol.

3.5.5. Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention)

The Convention aims to prevent the uncontrolled dumping of waste at sea. Some dumping of waste at sea is allowed under the Convention, but a permit is required under the federal *Environment Protection (Sea Dumping) Act 1981*, and arrangements are administered by the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC).

3.5.6. Bilateral Agreement with East Timor on the Import of Hazardous Waste for Disposal in Australia

This is a bilateral agreement under Article 11 of the Basel Convention to allow the import of hazardous waste from East Timor to Australia for disposal or recovery. Imports of wastes covered by the Agreement should be captured through existing Basel Convention reporting arrangements (as specified under the federal *Hazardous Waste (Regulation of Exports and Imports) Act 1989* and reported to the Basel Convention secretariat through the annual Transmission of Information Forms.

3.6. Summary and conclusions

The following sections present conclusions specific to individual obligations.



3.6.1. Summary and conclusions – Group 1 international obligations

The Basel Convention is implemented at the national level by the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* and the import and export of wastes covered by the Convention are managed under a notification and permit system by DSEWPaC. The notification and permit system provides a direct source of information on international movements (import, export and transit) of hazardous waste for reporting purposes under the Basel Convention, however it does not collect data on hazardous waste generated, treated and disposed of domestically; nor on the operation and capacity of waste management facilities and efforts to reduce the generation of hazardous and other waste. Domestic waste management is regulated and managed by the states and territories. Consequently, responsibility for collection of this data lies with them.

Although the Controlled Waste NEPM does not have a statutory relationship to the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* (or the Basel Convention), the NEPM has the potential to provide the basis for collection of national data on the generation of hazardous waste using a consistent definition and classification system, which could align with Australia's international waste-related reporting obligations. The national definition and classification system in the NEPM (at the level of the 75 materials categories) is fairly well aligned with the Basel Convention (with some exceptions). In addition, most states and territories operate an internal tracking system (sometimes multiple systems) for hazardous waste. These data combined may provide a reasonably comprehensive picture of the amount of hazardous waste generated, treated and disposed of domestically. The data collection and reporting arrangements under the Controlled Waste NEPM fall short of the needs of the Basel Convention (and related agreements) in the areas of household waste generation and incineration residues. This data would need to come from municipal solid waste and other sources. The Controlled Waste NEPM is discussed further in section 4 below.

The Stockholm Convention requires that wastes containing chemicals specified under the Convention be handled, collected, transported, stored and disposed of in accordance with the requirements of the Convention. Basel Convention obligations are to be taken into account with respect to environmentally sound disposal and transport across international boundaries. Specific requirements exist for polychlorinated biphenyls (PCBs) and listed polybrominated diphenyl ethers. Reporting requirements centre on volumes of chemicals and wastes traded and/or destroyed as well as information sharing on technologies, techniques and processes used. There is no single piece of legislation giving effect to these obligations but a range of legislative instruments dealing with industrial chemicals, pesticides and scheduled wastes are relevant.

The OECD Waste Indicator Reporting obligations are not covered by specific federal legislation or arrangements. It appears that OECD Waste Indicator reporting is reliant upon a variety of data sources, which implies that verification of individual data sets may be difficult and time consuming.

With respect to the OECD Control System for Waste Recovery, waste tracking and reporting arrangements are covered by the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*. However, there is some concern that the integrity of reporting of international movements of wastes

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for recovery may be complicated by variations in the physical state and/or composition of the waste that is destined for recovery.

The reporting of waste-related information under the UN Framework Convention on Climate Change and the Kyoto Protocol is adequately addressed by arrangements under the *National Greenhouse Gas Inventory Act 1997* and the *National Greenhouse and Energy Reporting Act 2007*.

3.6.2. Summary and conclusions – Group 2 international obligations

With regard to the Group 2 international obligations, waste is excluded from the Rotterdam Convention. The Waigani Convention is a multi-lateral agreement under Article 11 of the Basel Convention, and as such imports of waste covered by the Convention should be captured through arrangements under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*.

Since 2002, waste-related reporting in respect of obligations to the UN Commission on Sustainable Development (including Agenda 21) has been in response to themes covered by CSD Cycles. National reports to the Commission on Sustainable Development are provided on a voluntary basis. Given the variation in CSD reporting requirements, there is no specific national legislation or reporting arrangements, and any responses made to requests for information from the Commission are likely to draw upon a variety of formal and informal reports and data sets.

Similarly the Global Methane Initiative has no formal reporting requirements; although the Australian Government has submitted a country specific profile in respect of the nation's landfills and landfill gas projects.

3.6.3. Summary and conclusions – Group 3 international obligations

With the exception of the Bilateral Agreement with East Timor on the Import of Hazardous Waste for Disposal in Australia, which is managed under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*; the Group 3 international obligations are managed under administrative arrangements overseen by federal government departments or their agencies.



4. Review of State and Territory arrangements for the management and reporting of wastes

Much of the direct responsibility for the management of wastes rests with state, territory and local governments. The Australian Government has some specific responsibilities connected to international obligations, national legislation and national policies. The 2009 *National Waste Policy: Less waste, more resources* links these different roles and responsibilities together, across the varying levels of government. Of particular relevance for this study are Strategy 4 and Strategy 16 of the policy. Strategy 4 calls for the introduction of a national definition and classification system for wastes that aligns with definitions in international conventions. Strategy 16 commits to the development of a national waste data system to support periodic, online, accessible and up-to-date comprehensive national reporting on waste and resource recovery. This should also assist in meeting our international obligations.

The existing reporting arrangements that the state and territory governments have put in place in respect of the management of hazardous and other wastes have been reviewed below. To inform this review, a comparison of the national definitions of waste (including hazardous waste) with those that are being used in state and territory systems has been undertaken. In addition, the waste classification systems and tracking arrangements for waste that have been adopted by the states and territories are described; as are the current arrangements and practices for collecting waste data and reporting this information to the national bodies responsible for the administration of Australia's waste legislation and policy.

Section 3 above has shown that the reporting obligations in terms of international movements of waste as required by the Basel Convention; the OECD Control System for Waste Recovery; the Waigani Convention; and the Bilateral Agreement with East Timor are satisfied by the notification and permit system that has been established under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*. This notification and permit system is administered by the federal government (DSEWPaC) and does not rely on information from the state and territory governments or their agencies. Stockholm Convention reporting data on wastes is obtained from Customs, the National Pollutant Inventory, states and territories and industry.

Information to satisfy the OECD Waste Indicator Reporting Obligations and the UN Commission on Sustainable Development is currently drawn from a variety of formal and informal reports and data sources which attempt to reflect the situation at the state and territory level. As is stated above, the verification of these data sources is likely to be difficult and time consuming.

The reporting requirements of the UN Framework Convention on Climate Change and the Kyoto Protocol are addressed by arrangements established under the *National Greenhouse and Energy Reporting Act 2007*.



In addition to satisfying the above reporting requirements, the Australian Government is required to report against the following aspects of the Basel Convention (mostly reporting when circumstances change):

- Definitions of wastes, hazardous wastes, and other wastes
- Activity to reduce or eliminate hazardous and other wastes
- Disposal or recovery facilities that are operated within Australia.

With regard to the OECD Waste Indicator Reporting Obligations, the Australian Government is required to report against the generation of household, municipal, industrial, hazardous and nuclear waste. OECD reporting also includes waste by industry sector.

These aspects of the Basel Convention and the OECD Waste Indicator Reporting Obligations currently can only be partially satisfied by information that is collected at the state and territory level.

4.1. State and Territory arrangements for the implementation of national legislation on wastes

In Australia, the management of waste (including hazardous waste) from municipal, commercial and industrial, and construction and demolition sources, is controlled under regulatory regimes that have been enacted by the legislature of the jurisdiction in which the waste is present, as administered and enforced by the relevant state or territory regulatory agency. In addition, the waste may be subject to additional controls if scheduled for transit through, or treatment or disposal within, another state or territory.

From the perspective of national government, the current combined picture on underlying state and territory data arrangements does not fully-acquit the combined requirements of Australia's key waste-related international reporting obligations. There are issues of transparency, comparability, accuracy, completeness, clarity and timeliness with current underlying waste and resource recovery data arrangements. There are also issues with the underlying waste and resource recovery data arrangements in respect of specific content required by the reporting obligations. Tables 20 and 21 summarise these key issues for national government.

As is discussed in section 3 above, the main pieces of national legislation or instruments that are pertinent to the management of hazardous and other wastes in Australia are the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*, regulations under that Act and the *National Environmental Protection (Movement of Controlled Waste between States and Territories) Measure*.

Table 20 Current data arrangements against data system quality principles

Data system quality principles	General issues with current underlying data arrangements
<i>Transparency</i> – data documented and verifiable	Significant issues exist with the public documentation of input data across many data products and underlying systems. Major data sets and outputs are not able to be verified and may undergo little validation during their production. Many data systems and products do not provide a transparent description of their data methods. Some data sets are not compiled and many not released publicly (such as with hazardous waste).
<i>Comparability</i> – data is produced by the same methodologies and can be compared across jurisdictions	Definitions, classifications and data methods can differ significantly across current systems and products. As above, many systems and products (such as audit data sets) do not specify their methods, input data and workings, preventing standardisation and comparisons on a like-for-like basis.
<i>Accuracy</i> – uncertainty in data values is minimised	Significant inaccuracies exist across many data sets and systems. Few systems and data products contain a public estimate of uncertainty or error. Independent, third-party audit and assurance of waste and recovery data is rare.
<i>Completeness</i> – all sources within state boundaries are identified and accounted for	Even taking materiality thresholds for completeness into account, major geographic, subject matter and material flows gaps exist across current data arrangements. Differences in definitions, classifications and scope/boundary conditions around waste data across different systems contribute to these gaps when aggregating. Difference between 'total waste' and 'waste dealt with by waste industry' a key completeness issue with international obligation acquittal.
<i>Clarity</i> – information is understandable and accessible	Significant time and resource costs exist when users attempt to combine the currently-fragmented data on waste and recovery. Few comprehensive, easily accessible and searchable combined data products exist. Clarity problems are compounded by lack of transparency regarding methods, input data and workings.
<i>Timeliness</i> – reporting occurs on a regular schedule to enable informed decisions to be made	Major problems exist here. Some data sets from some jurisdictions are missing entirely, or produced only on a schedule (such as biennially) which fails to meet the annual reporting requirements of the obligations. Time lag problems are critical: some data sets can take two or three years from the end of the reporting period to be released, meaning aggregated reporting deadlines cannot be achieved and that data available to users is often too out of date to be fit for purpose.

Source: Australian Government, Department of Sustainability, Environment, Water, Population and Communities, 2012.

Table 21 Current data arrangements against key content required by the international obligations

Key content required	How do underlying Australian systems compare?
Action taken to minimise the generation of waste	Little to no data.
Disposal/recovery facilities operated, including capacity	Some data in public domain due to waste infrastructure database & map, but still gaps. Little to no facility capacity data available.
Total amount of waste generated	Good capacity to aggregate recovery, recycling & landfill disposal amounts, but scope of data more limited than obligations require. Little to no data on volumes to incineration or disaster wastes. Still some apples-to-oranges differences in state and territory systems regarding scope and coverage (eg non-metro).
Amount of waste imported/exported	Little to no data, except for hazardous waste. Some packaging data includes imports & exports.

Key content required	How do underlying Australian systems compare?
Action taken to minimise the generation of hazardous waste	Little to no data.
Total amount of hazardous generated	Some data on hazardous waste moving across borders. Little to no data on hazardous waste within a single jurisdiction. Little data disclosed publicly.
Total amount of hazardous and other waste generated, by type	Some data available against hazardous waste types, but lists in Basel, NEPM, NEPM reporting, hazardous tracking systems & other systems do not align. Major gaps in materials type data for non-hazardous waste.
Total amount of hazardous waste imported/exported	Good data.
Amount of hazardous waste and other waste sent to recovery and disposal	Some data in public domain but gaps and consistency issues exist. Energy recovery data and data for some particular wastes (eg organics) poor in completeness and accuracy. Majority of recovery data collected voluntarily.
Municipal waste generated	Good data derived from major collection services contracts. Data quality poorer with transfer stations and smaller councils. Transparency and timeliness issues exist.
Amount of municipal waste destined for treatment, disposal and recovery	Good data derived from major collection services contracts. Data quality poorer with transfer stations and smaller councils. Transparency and timeliness issues exist. Poor fit with energy recovery and 'treatment' aspects of requirements.
Generation of waste by industry sector	Little to no data.
Amount of waste generated, recovered, recycled by waste stream (eg C&D) or product (eg WEEE)	Some jurisdictions have improved arrangements for allocations of waste to stream but still rely on estimation with closed loads. Some jurisdictions have no split between C&I and C&D. Waste data against products or product groups usually poor (eg end of life vehicles).
Amount of non-hazardous waste going for recycling, composting, incineration or landfill disposal	Most recovery and recycling data sets rely on voluntary surveys with results of varying data quality. Landfill tonnages often better than recovery & recycling tonnages. Little to no data on incineration (such as of clinical wastes). Organics data questionable.
Split of municipal waste from household and other municipal wastes	Little to no capacity to split municipal waste data into its component parts.
Waste to landfill, wastewater & waste incineration related emissions of greenhouse gas	Generally good data, within limitations of emissions estimation methods. Quality problems exist around waste composition data.
Reporting against collection type	Reasonable data, with some coverage gaps, exists for key household collections (kerbside recycling, kerbside disposal, some green waste) but data quality is poorer for other collection types (such as bulky municipal waste, or C&I collections).
Composition of municipal waste	Some data exists in some jurisdictions for composition of household (if not municipal) waste, mostly derived from kerbside audits. No nationally-consistent materials typology is used, nor is a standard compositional audit method. Composition data at point of landfill disposal is poor.

Source: Australian Government, Department of Sustainability, Environment, Water, Population and Communities, 2012.



4.2. Definition of waste and waste classification systems

4.2.1. Defining waste

At a national level waste is defined under Schedule 4 of the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* as a subject or object that:

- (a) Is proposed to be disposed of; or
- (b) Is disposed of; or
- (c) Is required by a law of the Commonwealth, a State or a Territory to be disposed of.

Moreover, under the Act 'disposal' is taken to mean an operation specified in Annex IV of the Basel Convention, which effectively covers all of the typical means for the disposal or treatment of wastes. Thus 'wastes' as defined under the Act can be taken to include not only residual wastes destined for disposal (in terms of material that has no value and is sent to landfill or incineration), but also materials that may be subject to resource recovery, recycling, reclamation, direct re-use or alternative uses (i.e. materials that have value or could have value).

Table 22 below presents the waste definitions for each of the eight Australian states and territories, together with the principal legislation under which waste is defined within each jurisdiction. Each state and territory has its own definitions of waste, which differ from those of the other jurisdictions, and from that given in the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*.

None of the state or territory definitions of waste use the word disposal, though they all imply that waste is a substance or material that is no longer required, in that it is surplus to requirements; or is subject to discard; or is to be discharged, emitted or deposited in the environment. In addition, the state and territory definitions make no differentiation on the basis of whether the surplus or discarded material has a value or not; thus all of the definitions cover residual waste (materials that have no value) as well as materials that may be subject to recovery, recycling, reclamation or re-use (i.e. materials that have value or could have value).

The variation in definitions of waste among the states and territories has significant implications for the collection, collation, analysis and the reporting of waste in respect of Australia's international obligations. The current use of different definitions of waste by individual states and territories can only lead to inefficiencies and inaccuracies in waste data reporting by state and territory authorities to the national bodies responsible for reporting against Australia's international obligations.

Table 17 Australian State and Territory definitions of waste

Jurisdiction	Principal Legislation	Definition
Australian Capital Territory	<i>Environment Protection Act 1997</i>	Under the Act waste is defined as any solid, liquid or gas, or any combination of them, that is a surplus product or unwanted by-product of an activity, whether the product or by-product is of value or not.
New South Wales	<i>Protection of the Environment Operations Act (POEO Act 1997 as amended in 2008)</i>	Under the Act waste is defined as: (a) any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment, or (b) any discarded, rejected, unwanted, surplus or abandoned substance, or (c) any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or for recycling, processing, recovery or purification by a separate operation from that which produced the substance, or (d) any processed, recycled, re-used or recovered substance produced wholly or partly from waste that is applied to land, or used as fuel, but only in the circumstances prescribed by the regulations, or (e) any substance prescribed by the regulations to be waste. A substance is not precluded from being waste for the purposes of this Act merely because it is or may be processed, recycled, re-used or recovered.
Northern Territory	<i>Waste Management and Pollution Control Act (in force as of March 2009, replacing 1998 Act)</i>	Under the Act waste is defined as: (a) a solid, a liquid or a gas; or (b) a mixture of such substances, that is or are left over, surplus or an unwanted by-product from any activity (whether or not the substance is of value) and includes a prescribed substance or class of substances.
Queensland	<i>Environmental Protection Act 1994</i>	Under the Act waste includes anything other than a resource approved under subsection (4), that is: (a) left over, or an unwanted by-product, from an industrial, commercial, domestic or other activity (b) surplus to the industrial, commercial, domestic or other activity generating the waste. Waste can be a gas, liquid, solid or energy, or a combination of any of them. A thing can be waste whether or not it is of value. The administering authority may approve a resource, of a stated type of resource, for subsection (1) if it considers the resource, or type of resource, has a beneficial use other than disposal.
South Australia	<i>Environment Protection Act 1993</i>	Under the Act waste is defined as: (a) any discarded, rejected, abandoned, unwanted or surplus matter, whether or not intended for sale or for recycling, reprocessing, recovery or purification by a separate operation from that which produced the matter; or (b) anything declared by regulation (after consultation under section 5A) or by an environment protection policy to be waste, whether of value or not.

Jurisdiction	Principal Legislation	Definition
Tasmania	<i>Environmental Management and Pollution Control Act 1994</i>	Under the Act waste is defined as any: (a) discarded, rejected, unwanted, surplus or abandoned matter, whether of any value or not; or (b) discarded, rejected, unwanted, surplus or abandoned matter, whether of any value or not, intended – (i) for recycling, reprocessing, recovery, reuse or purification by a separate operation from that which produced the matter; or (ii) for sale.
Victoria	<i>Environment Protection Act 1970</i>	Under the Act waste is defined as: <ul style="list-style-type: none"> ■ any matter whether solid, liquid, gaseous or radio-active which is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment; ■ any discarded, rejected, unwanted, surplus or abandoned matter; ■ any otherwise discarded, rejected, abandoned, unwanted or surplus matter intended for— ■ recycling, reprocessing, recovery or purification by a separate operation from that which produced the matter; or ■ sale; and ■ any matter prescribed to be waste.
Western Australia	<i>Waste Avoidance and Resource Recovery Act 2007</i>	Under the Act waste is defined as matter whether useful or useless, which is discharged into the environment; or matter which is prescribed by the regulations to be waste.

Note: The focus of this table is on statutory definitions of waste in the states and territories. Not every piece of relevant state and territory legislation, and subsequent definitions, is included. Additional definitions, which may differ from the statutory definitions, could be present in non-statutory sources, such as waste policies and programs. For a more extended listing of state and territory definitions of waste, hazardous waste and recovered resources, please see *Australian Waste Definitions: Defining waste related terms by jurisdiction in Australia*. Sustainable Resource Use Australia, May 2012, <http://www.environment.gov.au/wastepolicy/publications/australian-waste-definitions.html>.



4.2.2. Waste classification systems

The definitions of waste that are described in section 4.2.1 above are useful in that they provide a means of distinguishing between non-waste materials (i.e. materials that are useful) and waste (i.e. materials that are surplus to requirements and/or require to be discarded). Nevertheless, for management and reporting purposes it is usually necessary to further differentiate between different types of waste using some form of classification system.

A number of waste classification systems are used in Australia for a variety of purposes. A jurisdiction might have one classification for general waste management, one specifically for hazardous waste and another for data and reporting purposes. Additional classifications may also be in place for a single jurisdiction beyond these three types. For example, a jurisdiction may have a classification for deciding what types of wastes or materials can go to what type of landfill, or a classification for quality, risk and acceptable end use of recovered resources based on their properties or the treatment processes applied to them.

One of the most commonly used systems classifies different wastes on the basis of the source of the material. Examples include: household waste; municipal solid waste (MSW) (i.e. waste that is collected by councils); commercial and industrial waste (C&I); and construction and demolition waste (C&D). Some of the above source-based classification schemes can be 'nested' in the sense that household waste typically forms part of the MSW waste stream in that it is usually collected by councils on behalf of the householder. Furthermore, MSW may also include commercial waste if a business elects (or is obliged) to have its waste collected by a council.

Other waste classification schemes can be materials based, for example it is possible to classify waste on the basis of their chemical properties (for example acid, alkali, reducing, oxidising, etc); or as defined substances (for example lead, asbestos, etc.). Alternatively, wastes may be classified on the basis of the hazard that they pose (either to human health and/or the environment). For example, hazardous wastes may be radioactive, explosive, carcinogenic, etc.

Other waste classification schemes take a management approach that frequently relates to generic material types. In its simplest form, wastes may be classified into solid or liquid wastes and then managed accordingly (liquid wastes often being banned from landfill and therefore must be subject to some form of treatment process). More often, the classification will focus on the most appropriate (or most likely) management arrangement that is to be employed for the waste. For example inert waste is generally understood to include a range of materials (such as concrete, grit and other debris) that are likely to have no, or only a limited impact, upon the environment and as such can be placed into a landfill with minimum requirements in terms of environmental safe guards or on-going monitoring of the environmental impact. Another example would be organic waste (often referred to as putrescible waste) which is typically comprised of green waste (e.g. lawn clippings) and kitchen waste (for example food scraps, vegetable peelings, etc.), but may also include paper, cardboard and wood. Organic wastes have the potential to cause a greater environmental impact than inert wastes, thus the management arrangements for organic wastes are usually more closely regulated, irrespective of whether they are to be placed in a landfill or



treated through some form of process. A discussion of hazardous waste is presented separately in section 4.2.3 below.

The principal waste classification systems that are employed by the eight Australian states and territories (primarily for managing waste under the jurisdiction's legislation) are summarised in Table 24.

An individual jurisdiction may adopt a waste classification system that draws upon different components of the sourced-based, materials-based, or management-based systems to produce a hybrid classification system to suit its particular purpose. Moreover, the same jurisdiction may employ several different waste classification systems for different purposes – for example a jurisdiction may adopt a particular waste classification system for the management of wastes within its boundaries, but also employ a different waste classification system for reporting purposes. The multiplicity of waste classification systems that are used by states and territories can significantly complicate the reporting of different waste streams at the state / territory and national levels. Moreover, the verification of data reported by state and territory authorities is likely to be both difficult and time consuming.

4.2.3. Defining hazardous waste

At a national level hazardous waste is defined under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* as:

- (a) Waste prescribed by the regulations where the waste has any of the characteristics mentioned in Annex III to the Basel Convention; or
- (b) Waste covered by paragraph 1(a) of Article 1 of the Basel Convention; or
- (c) Household waste; or
- (d) Residues arising from the incineration of household waste.

Thus under the Act waste is defined as hazardous if it belongs to any of the waste streams listed from Y1 to Y18 of Annex I of the Basel Convention (e.g. clinical wastes, waste pharmaceuticals, waste mineral oils, etc.); or if the waste contains one of the substances listed in waste streams Y19 to Y45 of Annex I of the Convention (e.g. metal carbonyls, zinc compounds, halogenated organic solvents, etc). In addition, the Australian Government has mandated that household wastes and the residues from the incineration of household waste shall be considered as hazardous waste for the purposes of the Act (which under the Basel Convention are considered to be 'Annex II wastes' i.e. categories of wastes requiring special consideration).

Within Australia, each state and territory has largely taken an individual approach to the designation of hazardous waste. Table 23 below presents a description of what is considered to be hazardous waste within each state and territory.

Table 24 describes the extent to which the state / territory designations of hazardous waste (or similar waste) map against the wastes covered by Schedule A List 1 of the Controlled Waste NEPM.

Table 18 Australian State and Territory waste classification systems and definitions of hazardous waste

Jurisdiction	Principal legislation	Waste classification system ⁷	Waste that is considered to be hazardous
Australian Capital Territory	<i>Environment Protection (Legislation) Regulations, Subordinate Law 2000 No. 36</i> made under the <i>Environment Protection Act 1997</i> and Environmental Standards: Assessment & Classification of Liquid & Non-liquid Wastes, June 2000.	Waste classification system is based on a previous version of the risk-based approach used by NSW. Waste is first classified as either liquid waste or non-liquid waste. Non-liquid waste is then further classified as either: <ul style="list-style-type: none"> ■ Inert ■ Solid ■ Industrial ■ Hazardous. 	Hazardous wastes are classified as follows: <ul style="list-style-type: none"> ■ Waste that meets the Australian Code for the Transport of Dangerous Goods by Road and Rail criteria. ■ Pharmaceutical and poisons waste generated by commercial activities that consists of substances specified in the <i>Poisons and Therapeutic Goods Act 1966 (NSW)</i> ■ Clinical waste ■ Cytotoxic waste ■ Sharps waste ■ Quarantine waste. The ACT legislation enacting the Controlled Waste NEPM refers directly to the waste materials listed under Schedule A, List 1 of the NEPM, with no additional materials subject to controlled movement within the territory.
New South Wales	<i>Environment Operations Act</i> (POEO Act 1997 as amended in 2008) and the <i>Waste Avoidance and Resource Recovery Act (WARR Act) 2001</i> . For the purposes of the Controlled Waste NEPM, Controlled Wastes are listed under Schedule 1 of the <i>Protection of the Environment Operations (Waste Regulation) 2005 (NSW)</i> .	Waste is classified on a risk-based approach to the treatment and handling of waste. Wastes are classified according to whether or not the waste should be classified first as special waste, then liquid waste, 'pre-classified' wastes or hazardous waste. Wastes with non-hazardous characteristics are then chemically assessed as general solid waste and further assessed as putrescible or non-putrescible waste. Special waste categories include: <ul style="list-style-type: none"> ■ Clinical and related waste ■ Asbestos waste ■ Waste tyres ■ Anything that is classified as special waste pursuant to an EPA Gazettal. 	Hazardous waste means waste (other than special waste or liquid waste) that includes: <ul style="list-style-type: none"> ■ Anything classified as a substance of Class 1, 2, 5 or 8 within the meaning of the <i>Transport of Dangerous Goods Code (DGC)</i>, or a substance to which Division 4.1, 4.2, 4.3 or 6.1 of the DGC applies. ■ Containers, having previously contained a substance of Class 1, 3, 4, 5 or 8 within the meaning of the DGC, or a substance to which Division 6.1 of the DGC applies, from which residues have not been removed. ■ Coal tar or coal tar pitch waste comprising of more than 1% (by weight) of coal tar or coal tar pitch waste. ■ Lead-acid or nickel-cadmium batteries (being waste generated or separately collected by activities carried out for business, commercial or community services purposes). ■ Lead paint waste arising otherwise than from residential premises or educational institutions. ■ Anything that is classified as hazardous waste pursuant to an EPA Gazettal notice. ■ Anything that is hazardous waste within the meaning of the Waste Classification Guidelines.

⁷ Source: *Australian Waste Classifications: Roles in Decision Making*. DSEWPac February 2011. Changes in classification since this study was conducted are not covered in the table.

Jurisdiction	Principal legislation	Waste classification system ⁷	Waste that is considered to be hazardous
Northern Territory	<p><i>Waste Management and Pollution Control Act</i> (in force as of March 2009).</p> <p>For the purposes of implementing the Controlled Waste NEPM, the <i>Waste Management and Pollution Control (Administration) Regulations (NT)</i> provides a list of Listed Wastes.</p>	<p>Wastes are classified as being one of the following:</p> <ul style="list-style-type: none"> ■ Putrescible waste ■ Inert waste ■ Listed waste. 	<p>Wastes are not classified as hazardous in the Northern Territories. The term 'Listed Waste' is used instead.</p> <p>Listed wastes pose a threat or risk to public health, safety or the environment and include substances which are:</p> <ul style="list-style-type: none"> ■ Toxic ■ Infectious ■ Mutagenic ■ Carcinogenic ■ Teratogenic ■ Explosive ■ Flammable ■ Corrosive ■ Oxidising.
Queensland	<p><i>Environmental Protection Act 1994</i></p>	<p>Wastes are classified as being one of the following:</p> <ul style="list-style-type: none"> ■ General waste ■ Limited Regulated waste ■ Regulated waste. <p>Queensland promotes treatment of Regulated waste to become Limited Regulated waste, which is lower in toxicity and can be disposed of at General waste landfills.</p>	<p>Wastes are not classified as hazardous in Queensland.</p> <p>Regulated Waste includes substances and wastes in Schedule 7 of the <i>Environmental Protection Regulation 2008 (Qld)</i>.</p> <p>In addition the following wastes are designated as Commercial Waste:</p> <ul style="list-style-type: none"> ■ Clinical Waste- <ul style="list-style-type: none"> - Animal waste - Discarded sharps - Human tissue waste - Laboratory waste ■ Related Waste- <ul style="list-style-type: none"> - Cytotoxic waste - Pharmaceutical waste - Human body parts - Chemical waste.
South Australia	<p><i>Environment Protection Act 1993.</i></p>	<p>South Australia uses a hierarchy of waste classifications. Wastes are first classified as being within one of the following first tier categories:</p> <ul style="list-style-type: none"> ■ Municipal solid waste ■ Commercial & industrial waste (general & listed) ■ Construction & demolition waste (inert & mixed) ■ Listed waste ■ Other wastes. <p>Municipal solid wastes are then classified as:</p>	<p>South Australia uses two classifications of 'hazardous waste': Listed Waste and Hazardous Waste. Hazardous wastes may not be sent to landfill.</p> <p>Hazardous Waste includes any unwanted or discarded material (excluding radioactive material), which because of its physical, chemical or infectious characteristics can cause significant hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed.</p> <p>Listed Waste means wastes listed in Part B of Schedule 1 of the <i>Environment Protection Act 1993</i> (59 listed items) which includes Medical Waste and Asbestos.</p>

Jurisdiction	Principal legislation	Waste classification system ⁷	Waste that is considered to be hazardous
		<ul style="list-style-type: none"> MSW domestic sources MSW hard waste MSW kerbside bin collection Household hazardous waste. <p>Construction & demolition wastes are then classified as:</p> <ul style="list-style-type: none"> C&D inert C&D mixed. <p>Listed wastes are then classified as:</p> <ul style="list-style-type: none"> Hazardous waste. <p>Other wastes are classified as:</p> <ul style="list-style-type: none"> Solid waste Liquid waste Inert waste Waste soil Medical waste Asbestos & asbestos containing material Radioactive waste E-waste Quarantine waste. 	<p>Hazardous Waste is a Listed Waste having a characteristic described in schedule A list 2 of the <i>National Environment Protection (Movement of controlled waste between States and Territories) Measure</i>, i.e.:</p> <ul style="list-style-type: none"> H1 Explosive H3 Flammable liquids H4.1 Flammable solids H4.2 Substances or wastes liable to spontaneous combustion H4.3 Substances or wastes which, in contact with water, emit flammable gases H5.1 Oxidising H5.2 Organic peroxides H6.1 Poisonous (acute) H6.2 Infectious substances H8 Corrosives H10 Liberation of toxic gases in contact with air or water H11 Toxic (delayed or chronic) H12 Ecotoxic H13 Capable of yielding another material which possesses H1-H2.
Tasmania	<i>Environmental Management and Pollution Control Act 1994.</i>	<p>Wastes are classified as:</p> <ul style="list-style-type: none"> Municipal waste Inert waste Construction & demolition waste Commercial & industrial waste Controlled waste. <p>Controlled wastes are further classified as:</p> <ul style="list-style-type: none"> Clinical & related waste Contaminated soils. <p>No legal definition exists within Tasmanian law for commercial and industrial, or construction and demolition wastes.</p> <p>Inert waste is defined as waste that will not degrade in the short term and which has a negligible risk to the environment.</p>	<p>Tasmania does not use the term hazardous waste, but instead classifies 'hazardous wastes' as: Controlled Waste, Clinical and Related Waste; or Contaminated Soils.</p> <p>Controlled Waste is:</p> <ul style="list-style-type: none"> Derived or arising from agricultural or veterinary chemical products within the meaning of the <i>Agricultural and Veterinary Chemicals Act 1995</i> A dangerous good within the meaning of the <i>Dangerous Goods Act 1998</i> Derived or arising from poisons within the meaning of the <i>Poisons Act 1971</i> A waste within the meaning of the <i>Quarantine Regulations 2000</i> of the Commonwealth A scheduled waste within the meaning of a National Management Plan. <p>Clinical and Related Waste is listed as follows:</p> <p>Clinical waste-</p> <ul style="list-style-type: none"> Pathology and sampling waste directly involved in laboratory testing Human anatomical waste Blood and body fluids and materials or equipment containing human blood or body fluids Animal tissue, carcasses or other associated animal waste arising from

Jurisdiction	Principal legislation	Waste classification system ⁷	Waste that is considered to be hazardous
			<p>laboratory investigation, or from medical or veterinary research or treatment</p> <ul style="list-style-type: none"> Discarded sharps. <p>Related waste-</p> <ul style="list-style-type: none"> Cytotoxic Pharmaceuticals Chemicals Radioactive waste.
Victoria	<i>Environment Protection Act 1970; Environment Protection (Industrial Waste Resource) Regulations 2009; Environment Protection (Prescribed Waste) Regulations 1998 (Vic).</i>	<p>Wastes are classified as:</p> <ul style="list-style-type: none"> Municipal waste Industrial waste Prescribed industrial waste. 	<p>Victoria does not use the term hazardous waste. Under the <i>Environmental Protection (Prescribed Waste) Regulations 1998 (Vic)</i>, Victoria has instituted a system of hazard classification for Prescribed Industrial Waste (PIW). PIW destined for landfill must be categorised into one of three categories: A, B or C. Category A wastes are banned from landfill and require treatment before disposal. Category B and C wastes can be accepted at best practice landfills that have approval from EPA to accept such wastes.</p> <p>PIW is any industrial waste or mixture containing industrial waste other than industrial waste or a mixture containing industrial waste that:</p> <ul style="list-style-type: none"> Is a Schedule 1 industrial waste Has a direct beneficial re-use and has been consigned for use Is exempt material Is not a Category A waste.
Western Australia	<i>Waste Avoidance and Resource Recovery Act 2007; Landfill Waste Classification and Waste Definitions 1996 (as amended December 2009); Environmental Protection (Controlled Waste) Regulations 2004).</i>	<p>Western Australia uses a management-based approach and focuses on the type of landfill suitable for disposal of specific classes of waste rather than specific waste streams. Only solid wastes may be sent to landfill.</p> <p>Landfill classes and waste types are as follows:</p> <ul style="list-style-type: none"> Class I – Inert landfill Class II – Putrescible landfill Class III – Putrescible landfill Class IV – Secure landfill Class V – Intractable landfill. 	<p>Western Australia does not use the term hazardous waste. Intractable waste is waste which cannot be treated to a lower level of toxicity or made easier to manage and therefore cannot be disposed of in Class I to Class IV landfills. Examples include:</p> <ul style="list-style-type: none"> Radioactive waste Significantly contaminated soils Industrial sludges Certain spent catalyst wastes. <p>Under the <i>Environmental Protection (Controlled Waste) Regulations 2004</i>) Western Australia has a list of Controlled Wastes.</p>

Table 19 State & Territory designations of hazardous waste compared to Schedule A List 1 of the Controlled Waste NEPM

Jurisdiction	Jurisdiction designation compared to Schedule A List 1 of the Controlled Waste NEPM
Australian Capital Territory	The ACT legislation enacting the Controlled Waste NEPM refers directly to the waste materials listed under Schedule A, List 1 of the NEPM, with no additional materials subject to controlled movement within the territory.
New South Wales	<p>The list of Controlled Wastes under Schedule 1 of the <i>Protection of the Environment Operations (Waste Regulation) 2005</i> maps against Schedule A List 1 of the Controlled Waste NEPM with the following exceptions:</p> <ul style="list-style-type: none"> ■ Animal effluent and residues (abattoir effluent, poultry and fish processing waste) ■ Asbestos (waste stream Y36 of the Basel Convention) ■ Grease trap waste ■ Oxidising agents ■ Reactive chemicals ■ Reducing agents ■ Tannery wastes (including leather dust, ash, sludges and flours) ■ Tyres ■ Wool scouring waste⁸.
Northern Territory	<p>The list of Listed Wastes under the <i>Waste Management and Pollution Control (Administration) Regulations (NT)</i> maps against Schedule A List 1 of the Controlled Waste NEPM with the following exceptions:</p> <ul style="list-style-type: none"> ■ Grease trap waste ■ Oxidising agents ■ Reactive chemicals ■ Reducing agents.
Queensland	<p>The list of Regulated Waste maps against the waste categories of Schedule A List 1 of the Controlled Waste NEPM with the exception of the following wastes which are not listed in Schedule 7 (none of which are waste streams listed under the Basel Convention):</p> <ul style="list-style-type: none"> ■ Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos ■ Cobalt compounds ■ Fire debris and fire washwaters ■ Soils contaminated with a controlled waste.
South Australia	<p>The list of Listed Wastes maps against Schedule A, List 1 of the Controlled Waste NEPM with the following exceptions:</p> <ul style="list-style-type: none"> ■ Animal effluent and residues (abattoir effluent, poultry and fish processing waste) ■ Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos ■ Cobalt compounds ■ Containers that are contaminated with residues of a listed waste ■ Encapsulated chemically fixed, solidified or polymerised wastes (waste stream Y18 of the Basel Convention) ■ Ethers (waste stream Y40 of the Basel Convention) ■ Filter cake ■ Fire debris and fire washwaters

⁸ Source: *Waste Classifications in Australia – A Comparison of waste classifications in the Australian Waste Database with Current Jurisdictional Classifications*. DSEWPac December 2011.

Jurisdiction	Jurisdiction designation compared to Schedule A List 1 of the Controlled Waste NEPM
	<ul style="list-style-type: none"> ■ Fly ash ■ Grease trap waste ■ Non toxic salts ■ Polychlorinated dibenzo-furan (any congener) (waste stream Y43 of the Basel Convention) ■ Polychlorinated dibenzo-dioxin (any congener) (waste stream Y44 of the Basel Convention) ■ Soils contaminated with a controlled waste ■ Tannery wastes (including leather dust, ash sludges and flours) ■ Tellurium, tellurium compounds (waste stream Y28 of the Basel Convention) ■ Triethylamine catalysts for setting foundry sands ■ Tyres ■ Waste chemical substances arising from research and development or teaching activities including those which are not identified and/or are new and whose effects on human health and/or the environment are not known (waste stream Y14 of the Basel Convention) ■ Waste from heat treatment and tempering operations containing cyanides (waste stream Y7 of the Basel Convention) ■ Waste from the manufacture, formulation and use of wood-preserving chemicals (waste stream Y5 of the Basel Convention) ■ Wastes from the production and preparation of pharmaceutical products (waste stream Y2 of the Basel Convention) ■ Wastes from the production, formulation and use of biocides and phytopharmaceuticals (waste stream Y4 of the Basel Convention) ■ Waste from the production, formulation and use of inks, dyes, pigments, paints lacquers and varnish (waste stream Y12 of the Basel Convention) ■ Waste from the production, formulation and use of organic solvents (waste stream Y6 of the Basel Convention) ■ Waste from the production, formulation and use of photographic chemicals and processing materials ■ Waste mineral oils unfit for their original intended use (waste stream Y8 of the Basel Convention) ■ Waste of an explosive nature not subject to other legislation (waste stream Y15 of the Basel Convention) ■ Waste oil/water, hydrocarbons/water mixtures or emulsions (waste stream Y9 of the Basel Convention) ■ Waste resulting from surface treatment of metals and plastics (waste stream Y17 of the Basel Convention) ■ Waste tarry residues arising from refining, distillation, and any pyrolytic treatment (waste stream Y11 of the Basel Convention) ■ Wool scouring waste.
Tasmania	The list of Controlled Wastes under the <i>Environmental Management and Pollution Control (Waste Management) Regulation 2010</i> (Regulation 5) (Tas) maps exactly against Schedule A List 1 of the Controlled Waste NEPM.
Victoria	<p>The list of PIW maps against Schedule A List 1 of the Controlled Waste NEPM with the exception of the following:</p> <ul style="list-style-type: none"> ■ Chlorates ■ Containers that are contaminated with residues of a listed waste ■ Fire debris and fire washwaters ■ Organic phosphorus compounds (waste stream Y37 of the Basel Convention) ■ Reducing agents

Jurisdiction	Jurisdiction designation compared to Schedule A List 1 of the Controlled Waste NEPM
	<ul style="list-style-type: none"> ■ Triethylamine catalysts for setting foundry sands ■ Tyres ■ Waste containing peroxides other than hydrogen peroxides ■ Wastes from heat treatment and tempering operations containing cyanides (waste stream Y7 of the Basel Convention) ■ Waste pharmaceuticals, drugs and medicines (waste stream Y3 of the Basel Convention).
Western Australia	<p>The list of Controlled Wastes maps against Schedule A List 1 of the Controlled Waste NEPM with the exception of:</p> <ul style="list-style-type: none"> ■ Reactive chemicals ■ Reducing agents.

At the state and territory level there is significant variation in how hazardous wastes are defined; as well as the terms that are used to classify such materials. From a practical perspective, the Controlled Waste NEPM provides some degree of rationalisation of hazardous waste definitions and classifications that are used by the state and territories, but even in this respect the wastes that are covered by the various state and territory definitions of hazardous waste do not always map neatly against those covered by Schedule A List 1 of the NEPM.

4.3. Tracking and reporting of waste

The Controlled Waste NEPM is intended to provide a comprehensive, national system for monitoring and reporting all interstate movements of controlled wastes. Under the system the waste producer is required to apply for a consignment authorisation number from the environmental agency of the destination state or territory. The producer of the waste is issued with a unique authorisation number for the type of controlled waste, their nominated licensed transporter and their nominated licensed waste facility.

The following material is included to provide an understanding of current controlled waste tracking arrangements, which are a key source of primary data for later international reporting. A basic description of the interstate waste tracking process is as follows:

- The waste producer (or agent) seeking to send waste interstate completes and signs an interstate consignment authorisation and submits this to the environmental agency of the destination state or territory.
- The information presented in the application is verified and consultation, where appropriate, takes place to determine whether the destination facility may receive the waste.
- Following agreement by the destination facility that it is able to accept the waste, a consignment authorisation number is issued to the waste producer. Upon receipt of the waste, the destination facility is obliged to notify the waste producer (or agent) and the regulatory agencies in the states or territories involved.



The majority of states and territories rely on the use of a paper-based 5 docket system (variously referred to as 'waste transport certificates', 'waste manifests'). It is understood that the information that is requested by the 5 docket system is broadly consistent between the different states and territories. Each waste transport certificate consists of five replicate copies that are retained or forwarded by / to different parties. The example of a waste transport certificate docket system that is presented in Table 25 below is taken from South Australia.

Table 26 sets out the principal mechanisms used by individual states and territories to track movements of waste under the Controlled Waste NEPM. It can be seen that there is a general reliance on the use of paper-based tracking systems (with the exception of New South Wales). The information captured by the paper-based systems is then usually manually entered into an electronic database by the relevant environment agencies.

It has not been possible to determine the extent to which the interstate waste tracking process is used by jurisdictions to manage and record intrastate movement of controlled waste.

Table 20 South Australian waste transport certificate docket system

Colour of Copy	Fate of Copy
Green	Retained by the waste producer
Pink	Forwarded by the waste producer to SA EPA within seven days of dispatching the waste.
Blue	Retained by transporter
Yellow	Retained by depot receiving the waste
White	Forwarded by depot to the SA EPA within seven days of receiving waste
White tear-off slip	Forwarded by the depot to the waste producer to indicate that the waste has reached its destination.

Table 21 Australian State and Territory waste tracking frameworks

State	Agency	Description
Australian Capital Territory	ACT Environmental Protection Authority	A paper-based 5 docket system is used and the collection information is manually entered into a Microsoft Access database.
New South Wales	NSW Environmental Protection Agency	An online system is provided by the Department of Environment and Climate Change (NSW) which can be used to track waste within NSW or into NSW. Waste imported into the state is recorded using the paper-based 5 docket system and the information is then entered into the online system.
Northern Territory	Department of Natural Resources, Environment, the Arts and Sport	A paper-based 5 docket system is used to record waste movements into and out of the territory.
Queensland	Department of Environment and Heritage Protection	A paper-based 5 docket system is used to collect the information which is then transferred manually to the Waste Tracking Database System.
South Australia	SA Environmental Protection Authority	A 5 docket paper-based system is used.

State	Agency	Description
Tasmania	Tasmanian Environmental Protection Authority	A paper-based system is used.
Victoria	Environmental Protection Agency Victoria	A paper-based system is used. The import of controlled waste requires the completion of a waste transport certificate (from the environmental protection agency in the state or territory of origin) together with a consignment authorisation form from EPA Victoria. The export of controlled waste requires the waste transport certificate (or equivalent) from the state or territory of destination.
Western Australia	Department of Environment and Conservation	A Microsoft Word document based on the 5 docket system is used for interstate waste tracking which is issued on approval of a consignment authorisation.

The consideration that has been given to the Controlled Waste NEPM in section 3 and in this section has shown that although the Controlled Waste NEPM provides a mechanism for controlling interstate movement of the hazardous wastes that are listed in Schedule A List 1 of the NEPM, this system cannot be used to gather all of the information required for reporting purposes under the Basel Convention (and related Conventions). Moreover, the Controlled Waste NEPM does not provide an effective mechanism for reporting waste movements within a jurisdiction; nor does it provide information on waste generation, or the provision of facilities for the management of wastes.

4.4. Conclusions

This section has considered the arrangements that the state and territories have put in place to implement national waste management legislation; and how these arrangements affect the Australian Government's ability to honour its international waste-related reporting obligations.

With the definition of wastes, hazardous wastes and other wastes: the state and territory governments have implemented legislation and arrangements that define waste and classify different waste types. However, the variation in definitions of waste and classification of waste types has significant implications for the collection, collation, analysis and reporting of waste in respect of Australia's international obligations. The current use of different definitions of waste and waste classification systems by individual jurisdictions, can only lead to inefficiencies, inaccuracies and gaps in waste data reporting by state and territory authorities to the national bodies responsible for reporting against Australia's international obligations. Currently there is no formal mechanism for reporting the types and quantities of different waste streams that arise within the states and territories. There is also little consistency in terms of when data collected by the jurisdictions is released publically. Two or three years can elapse from the end of a reporting period before data is reported publically. Some key data that the Australian Government is to produce annually is only being collected and reported every two years by some jurisdictions, if it is collected and reported publically at all.

From the perspective of national government, the current combined picture on underlying state and territory data arrangements does not fully-acquit the combined requirements of Australia's key



waste-related international reporting obligations. There are issues of transparency, comparability, accuracy, completeness, clarity and timeliness with current underlying waste and resource recovery data arrangements. There are also issues with the underlying waste and resource recovery data arrangements in respect of specific content required by the reporting obligations, such as with the generation of hazardous waste.

With regard to the tracking and reporting of movements of hazardous wastes between states and territories: it is understood that the Controlled Waste NEPM provides an effective system that is used by all states and territories, although there is variation between jurisdictions in how this information is recorded and stored. Of itself the Controlled Waste NEPM does not capture information about all of the hazardous waste types that are listed in Annex I of the Basel Convention. Moreover the Controlled Waste NEPM does not capture information about interstate movements of household waste, and residues from waste incineration, which are listed in Annex II of wastes under the Basel Convention and classified as hazardous waste under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*.

In respect of collecting information about the activities to reduce or eliminate hazardous and other wastes, and the number and types of disposal or recovery facilities that are operated within Australia, as is required by the Basel Convention; again there is no formal mechanism by which this information is collected and reported by the individual jurisdictions. Similarly Australia also has no formal mechanism at the state and territory level to collect information in respect of the generation of household, municipal, hazardous and nuclear waste as required by the OECD Waste Indicator Reporting Obligations.

5. A forward look at international treaties and obligations

This chapter provides a brief overview of known or anticipated forthcoming changes to existing international treaties and possible new instruments. These are highlighted here as being of relevance for future data gathering and reporting on waste generation and waste management practices or where there may need to be changes for the management of particular waste streams. These obligations may be of relevance for national definition and classification systems produced under Strategy 4 of the National Waste Policy and any regular reporting requirements relating to Strategy 16 of the same Policy.

5.1. Waste electrical and electronic equipment

Electrical and electronic waste, also known as e-Waste, or waste electrical and electronic equipment (WEEE) contains a range of potential harmful components and materials, including: batteries and accumulators; cathode ray tubes; mercury switches; activated glass; persistent organic pollutants (POPs), both in components and in flame retardants within equipment casings; as well as heavy metals. Worldwide, it is a growing waste stream, with concerns being raised about international trade in these wastes.

The European Union Directive on e-waste⁹ covers the recovery and recycling of this waste stream and places obligations on producers of electrical and electronic equipment to fund the collection of e-waste for recycling and recovery. The Basel Convention currently includes entries specific to e-waste. One entry relates to hazardous e-wastes and another to less hazardous e-wastes.

In March 2012 the Secretariat of Basel Convention (SBC) and International Telecommunication Union (ITU), which is the UN body for information and communication technology, have signed an agreement aimed at protection of the environment from the effects of e-waste

The ITU-SBC collaboration seeks to collect and recycle the hazardous materials by introducing safeguards in the management of e-Waste.

The ITU has previously worked on the subject of e-waste, both in setting standards that affect the production of products, minimising waste from this part of a product's lifecycle (i.e. the production phase), and in preparing guidance on the safe recycling and recovery of e-waste.

The Secretariat for the Basel Convention is currently preparing specific guidance on e-waste; including a major piece of work on the classification of e-waste for recovery, direct reuse, or as waste items. The OECD has prepared guidance on the environmentally sound management (ESM) of used and discarded personal computers.

⁹ Waste Electrical and Electronic Equipment (WEEE) Directive (2002/96/EC)
SINCLAIR KNIGHT MERZ



This work, once completed may eventually impact on the reporting requirements for e-waste and management of e-waste under the Basel Convention and OECD protocol on transboundary movement of waste.

E-waste often contains brominated flame retardants, two of which were added to the Stockholm Convention in 2009. Several specific questionnaires have been received on these chemicals from the Stockholm Convention but Australia is yet to ratify the listing of these brominated flame retardants.

5.2. The Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is a new chemical classification system developed by the United Nations (UN). The aim of the GHS is 'to have, worldwide, the same criteria for classifying chemicals according to their health and environmental effects and physical hazards; and hazard communication requirements for labelling and safety data sheets'¹⁰.

The mandate to produce this classification system was agreed at the Earth Summit in Rio 1992. It is designed to replace existing chemical classification systems with a new system where labelling and classification is consistent between different nations and territories.

The new GHS system does not match current systems used, whether those systems are within waste legislation such as the Basel Convention or within transport legislation such as the ADR¹¹ international goods transportation agreement. Instead of the current system which relies on hazard codes and risk phrases, the GHS uses a system of hazard codes only, which have much more detail about the hazard posed by the chemical. The hazard codes now detail the nature of the hazard posed by a chemical, which may be physical or health related, including the degree of hazard for health related hazards; and any environmental hazards that the chemical poses. Physical hazards include those such as whether the chemical is flammable or explosive. Health hazards include carcinogenic, specific target organ toxicity and acute toxicity. Revised hazard labels are also required.

The UN GHS is not a formal treaty; rather it is a non-legally binding international agreement. Signatory countries are required to create local or national legislation to implement the GHS. For example, within the European Union, the Regulation on Classification, Labelling and Packaging of Substances and Mixtures (the CLP Regulation) entered into force in January 2009, giving member states 7.5 years to phase in the Regulation's provisions (up to June 2015).

In Australia GHS is being implemented through the *Work Health and Safety Regulations 2012* (WHS Regulations), which will require the classification system to be used after the 31st December

¹⁰ UK, Health and Safety Executive (HSE) Guidance, www.hse.gov.uk/ghs.index.htm

¹¹ European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)



2016. Up until this date either the GHS or the existing Approved Criteria for Classifying Hazardous Substances (NOHSC: 1008) system can be used for classification.

As the GHS system is an UN level document, and its preparation has included input from organisations including Australia, the European Union and the OECD, it is likely that any international agreements that are based upon the hazardous properties of chemicals will be revised to reflect the new system. This may lead to additional materials being covered under the revised arrangements. For example the GHS could impact upon the Basel Convention and the OECD protocol on the transboundary movement of waste, which would then have further implications for federal and state definitions of hazardous waste and associated reporting requirements.

5.3. Rio +20 Conference in June 2012

The United Nations Conference on Sustainable Development (UNCSD) will take place in Brazil on 20-22 June 2012 to mark the 20th anniversary of the 1992 United Nations Conference on Environment and Development (UNCED), and the 10th anniversary of the 2002 World Summit on Sustainable Development (WSSD).

The Conference will focus on two themes: (a) a green economy in the context of sustainable development and poverty eradication; and (b) the institutional framework for sustainable development.

The preparations for Rio+20 have highlighted seven areas which need priority attention: these include decent jobs, energy, sustainable cities, food security and sustainable agriculture, water, oceans and disaster readiness.

There may be actions that impact on waste management activity that arise directly or indirectly from this conference and therefore the final discussions should be reviewed once available.

5.4. The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships

The Hong Kong Convention is aimed at ensuring that ships being recycled after reaching the end of their operational lives do not pose unnecessary risk to human health and safety, or to the environment.

The Convention was adopted at a Diplomatic Conference held in Hong Kong, in May 2009 and was developed with input from the International Maritime Organisation (IMO) member States, NGOs, the International Labour Organization, and the Parties to the Basel Convention.

The Convention intends to address the issues around ship recycling, particularly in respect of the safe management of environmentally hazardous substances such as asbestos, heavy metals, hydrocarbons, and ozone depleting substances from decommissioned ships.



Ships that are sent for recycling will be required to carry an inventory of hazardous materials, which will be specific to each ship. An appendix to the Convention provides a list of hazardous materials, the installation or use of which is prohibited or restricted in shipyards, ship repair yards, and ships of Parties to the Convention. Ships will be required to have an initial survey to verify the inventory of hazardous materials, renewal surveys during the life of the ship, and a final survey prior to recycling.

Ship recycling yards will be required to provide a Ship Recycling Plan, to specify the manner in which each individual ship will be recycled, depending on its particulars and its inventory. Parties will be required to take effective measures to ensure that ship recycling facilities under their jurisdiction comply with the Convention.

A series of guidelines have been developed to assist in the Convention's implementation¹².

The Convention is open for accession by any State. This Convention will come into force 24 months after it has a sufficient number of signatories (15 states), and those so long as the signatories represent 40 percent of the world's merchant shipping fleet¹³.

This Convention has not been ratified by Australia and it is unlikely that it will come into force within the next 5 years.

5.5. United Nations Environment Programme (UNEP) legally binding instrument on mercury

A global legally binding instrument on mercury is currently being negotiated under the auspices of the United Nations Environment Programme (UNEP). In 2009 the UNEP Governing Council mandated the creation of an Intergovernmental Negotiating Committee (INC) to prepare the instrument in the form of a multilateral environmental treaty. Negotiations commenced in 2010, with a view to finalising the text of the treaty by early 2013 for consideration by the UNEP Governing Council at its meeting in February 2013. It is expected that the treaty will enter into force two to three years after that, depending on the number and rate of countries ratifying the treaty. Australia is actively engaged in the negotiation process and is working with a wide range of stakeholders.

¹² International Maritime Organisation, www.imo.org

¹³ It will enter into force 24 months after the date on which 15 States, representing 40 per cent of world merchant shipping by gross tonnage, have either signed it without reservation as to ratification, acceptance or approval or have deposited instruments of ratification, acceptance, approval or accession with the Secretary General.



The overall goal of the instrument is to protect human health and the global environment from the release of mercury and its compounds by minimizing, and where feasible, eliminating global, anthropogenic mercury releases to air, water and land. It will address mercury through its lifecycle; including its intentional production, as well as its production as a by-product of industrial processes; its intentional use in products and processes; its unintentional release to the atmosphere, land and water; and end-of-life issues such as waste, storage and the remediation of contaminated sites.

5.6. Addition of Chemicals to the Stockholm Convention

In 2009, nine chemicals were added to the Stockholm Convention which included, for the first time, chemicals widely used in consumer articles such as carpets, textiles, electrical and electronic equipment, furniture and motor vehicles. Australia is yet to ratify these additions, but the presence of these chemicals in consumer articles will raise new difficulties in relation to future reporting requirements including in relation to chemical disposal. Another chemical was added to the Convention in 2011. Additional chemicals are expected to be added to the Convention in the future.



6. Summary and conclusions

This report has considered the waste reporting requirements of the international obligations (Protocols, Treaties, Conventions and agreements) to which Australia is a signatory. The report has also reviewed some of the the current arrangements that exist within states and territories for data and reporting on hazardous waste. State and territory definitions of waste and the classification systems that are used for different waste types at the jurisdictional level have been discussed in the context of how these arrangements inform Australia's international waste-related reporting obligations. A brief overview of known or anticipated changes to international treaties has also been undertaken.

6.1. Review of international obligations

The following Protocols, Treaties, Conventions and agreements have been reviewed as part of this study:

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Stockholm Convention on Persistent Organic Pollutants (POPs)
- The Organisation for Economic Co-operation and Development (OECD) Member Reporting Requirements-
 - Waste Indicator Reporting
 - The OECD Control System for Waste Recovery
- United Nations Framework Convention on Climate Change (UNFCCC)
- Kyoto Protocol to the United Nations Framework Convention on Climate Change
- The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
- The Waigani Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- United Nations Commission on Sustainable Development
- Global Methane Initiative (formerly the Methane to Markets Partnership)
- The Antarctic Treaty
- Joint Convention On The Safety Of Spent Fuel Management And On The Safety Of Radioactive Waste Management
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter
- Bilateral Agreement with East Timor on the Import of Hazardous Waste for Disposal in Australia.

From those obligations, the key waste and resource recovery content required from Australia is as listed below.



Summary – key content required under Australia's international waste-related reporting obligations

- Action taken to minimise the generation of waste
- Disposal/recovery facilities operated, including capacity
- Total amount of waste generated
- Amount of waste imported/exported
- Action taken to minimise the generation of hazardous waste
- Total amount of hazardous waste generated
- Total amount of hazardous and other waste generated, by type
- Total amount of hazardous waste imported/exported
- Amount of hazardous waste and other waste sent to recovery and disposal
- Municipal waste generated
- Amount of municipal waste destined for treatment, disposal and recovery
- Generation of waste by industry sector
- Amount of waste generated, recovered, recycled by waste stream (eg C&D) or product (eg WEEE)
- Amount of non-hazardous waste going for recycling, composting, incineration or landfill disposal
- Split of municipal waste from household and other municipal wastes
- Waste to landfill, wastewater & waste incineration related emissions of greenhouse gas
- Reporting against collection type
- Composition of municipal waste.

Waste reporting requirements vary between the obligations in that for some they are set out in the official text of the obligations themselves, with regular reporting cycles and specific data needs being identified. The best example of this is for the Basel Convention which has general and annual reporting obligations set out in the Convention text, specifying the reporting frequency, reporting period, the datasets that are required and the waste definitions that are to be used. Other obligations such as the OECD Waste Indicator Reporting are no less onerous in terms of the amount of data that is requested, but the requirements with regard to reporting arrangements are not specified in the text of a particular agreement. The OECD Waste Indicator Reporting and Basel Convention reporting require the largest range of waste data sets. Both also have detailed waste data collection questionnaires to ensure that information is collected in a consistent format. This assists the process of reporting and allows data between years to be easily manipulated and verified.

The Basel Convention requests information on disposal and treatment/recovery facilities, in terms of description of the facility, operation or process, the capacity of the facility (in metric tons), and whether the facility treats imported waste. The Global Methane Initiative refers only to landfill. The Kyoto Protocol requests information on CO₂ emissions from waste operations. This information is



linked to the amount of waste handled by these facilities. The Stockholm Convention requests data via an online survey.

The primary reporting frequencies are annual for the Basel Convention, OECD requirements (including the Annual Quality Assurance Questionnaire), Kyoto Protocol, and the Waigani Convention; with the OECD State of the Environment Report being prepared and released on a biennial cycle. Under the Stockholm Convention, Article 15 reporting takes place every four years but these are supplemented with typically four to eight ad hoc questionnaires each year. The biggest overlap in data is the hazardous waste generation and import/export information shared between the Basel Convention and OECD Waste Indicator Reporting. Information on household waste generation is also requested by both obligations.

Other obligations such as Agenda 21 (under the UN Commission for Sustainable Development) have two yearly reporting cycles, but information requirements are different for each cycle, limiting opportunities for combining datasets. Reporting periods are generally on a calendar year basis (January – December) which may not necessarily correspond to financial year reporting for municipal and household waste streams at state and territory levels.

Australia reports regularly in respect of the Basel Convention and OECD requirements, though there is usually a delay in reporting and publishing this data on the secretariat's websites (and in other environmental reports). The most recent OECD publications (2011 reports) contain waste data for 2009, whereas the Basel Convention's secretariat is currently reporting datasets from 2009.

Data quality is influenced by reporting systems, procedures and methods and whether validation/verification of data is undertaken. The Basel Convention and OECD waste indicator reporting have standard reporting forms which should make data collection easier. However, some of the reporting forms for Australia submitted for both the Basel Convention and OECD reporting that have been reviewed during this study have not always contained the full data sets that were required or the information provided for a given year has not always been accurate: e.g. some of the data for the State of the Environment questionnaire for 1992 was for a financial year, not a calendar year, and related to one Australian state and not all states and territories. Moreover, the Basel Convention forms that have been reviewed do not contain information on the amount of hazardous waste generated in Australia.

Verification of OECD Waste Indicator data is carried out by the OECD secretariat in consultation with the Australian Government. If data from either of the State of the Environment of Annual Quality Assurance questionnaires is to be used for an environmental publication then relevant entries are checked with the Australian Government.



With the exception of data relating to the import/export of hazardous waste under the Basel Convention, and greenhouse gas emissions from landfills and other waste management operations in respect of the Kyoto Protocol, which are collected through systems administered by the federal government; national level reporting currently relies on the collation of state and territory level data from a variety of sources. This process would be made easier if the required state and territory information was held in one place, was available in the same format, covered the same reporting period, was released at a similar time after the end of the reporting period (and these releases were timely), and presented the same type of information (in terms of the definition and classification of wastes, and waste quantities).

Reporting for the Stockholm Convention relies on a mixture of federal, state, territory and industry sources done on an ad hoc basis and with considerable data gaps.

6.2. National legislation and arrangements for the management and reporting of wastes

From the perspective of national government, the current combined picture on underlying state and territory data arrangements does not fully-acquit the combined requirements of Australia's key waste-related international reporting obligations. There are issues of transparency, comparability, accuracy, completeness, clarity and timeliness with current underlying waste and resource recovery data arrangements. There are also issues with the underlying waste and resource recovery data arrangements in respect of specific content required by the reporting obligations. The two tables (Tables 27 & 28) following summarise these key issues for national government.

Table 22 Current data arrangements against data system quality principles

Data system quality principles	General issues with current underlying data arrangements
<i>Transparency</i> – data documented and verifiable	Significant issues exist with the public documentation of input data across many data products and underlying systems. Major data sets and outputs are not able to be verified and may undergo little validation during their production. Many data systems and products do not provide a transparent description of their data methods. Some data sets are not compiled and many not released publicly (such as with hazardous waste).
<i>Comparability</i> – data is produced by the same methodologies and can be compared across jurisdictions	Definitions, classifications and data methods can differ significantly across current systems and products. As above, many systems and products (such as audit data sets) do not specify their methods, input data and workings, preventing standardisation and comparisons on a like-for-like basis.
<i>Accuracy</i> – uncertainty in data values is minimised	Significant inaccuracies exist across many data sets and systems. Few systems and data products contain a public estimate of uncertainty or error. Independent, third-party audit and assurance of waste and recovery data is rare.
<i>Completeness</i> – all sources within state boundaries are identified and accounted for	Even taking materiality thresholds for completeness into account, major geographic, subject matter and material flows gaps exist across current data arrangements. Differences in definitions, classifications and scope/boundary conditions around waste data across different systems contribute to these gaps when aggregating. Difference between 'total waste' and 'waste dealt with by waste industry' a key completeness issue with international obligation acquittal.
<i>Clarity</i> – information is understandable and accessible	Significant time and resource costs exist when users attempt to combine the currently-fragmented data on waste and recovery. Few comprehensive, easily accessible and searchable combined data products exist. Clarity problems are compounded by lack of transparency regarding methods, input data and workings.
<i>Timeliness</i> – reporting occurs on a regular schedule to enable informed decisions to be made	Major problems exist here. Some data sets from some jurisdictions are missing entirely, or produced only on a schedule (such as biennially) which fails to meet the annual reporting requirements of the obligations. Time lag problems are critical: some data sets can take two or three years from the end of the reporting period to be released, meaning aggregated reporting deadlines cannot be achieved and that data available to users is often too out of date to be fit for purpose.

Source: Australian Government, Department of Sustainability, Environment, Water, Population and Communities, 2012.

Table 23 Current data arrangements against key content required by the international obligations

Key content required	How do underlying Australian systems compare?
Action taken to minimise the generation of waste	Little to no data.
Disposal/recovery facilities operated, including capacity	Some data in public domain due to waste infrastructure database & map, but still gaps. Little to no facility capacity data available.
Total amount of waste generated	Good capacity to aggregate recovery, recycling & landfill disposal amounts, but scope of data more limited than obligations require. Little to no data on volumes to incineration or disaster wastes. Still some apples-to-oranges differences in state and territory systems regarding scope and coverage (eg non-metro).
Amount of waste imported/exported	Little to no data, except for hazardous waste. Some packaging data includes imports & exports.

Key content required	How do underlying Australian systems compare?
Action taken to minimise the generation of hazardous waste	Little to no data.
Total amount of hazardous generated	Some data on hazardous waste moving across borders. Little to no data on hazardous waste within a single jurisdiction. Little data disclosed publically.
Total amount of hazardous and other waste generated, by type	Some data available against hazardous waste types, but lists in Basel, NEPM, NEPM reporting, hazardous tracking systems & other systems do not align. Major gaps in materials type data for non-hazardous waste.
Total amount of hazardous waste imported/exported	Good data.
Amount of hazardous waste and other waste sent to recovery and disposal	Some data in public domain but gaps and consistency issues exist. Energy recovery data and data for some particular wastes (eg organics) poor in completeness and accuracy. Majority of recovery data collected voluntarily.
Municipal waste generated	Good data derived from major collection services contracts. Data quality poorer with transfer stations and smaller councils. Transparency and timeliness issues exist.
Amount of municipal waste destined for treatment, disposal and recovery	Good data derived from major collection services contracts. Data quality poorer with transfer stations and smaller councils. Transparency and timeliness issues exist. Poor fit with energy recovery and 'treatment' aspects of requirements.
Generation of waste by industry sector	Little to no data.
Amount of waste generated, recovered, recycled by waste stream (eg C&D) or product (eg WEEE)	Some jurisdictions have improved arrangements for allocations of waste to stream but still rely on estimation with closed loads. Some jurisdictions have no split between C&I and C&D. Waste data against products or product groups usually poor (eg end of life vehicles).
Amount of non-hazardous waste going for recycling, composting, incineration or landfill disposal	Most recovery and recycling data sets rely on voluntary surveys with results of varying data quality. Landfill tonnages often better than recovery & recycling tonnages. Little to no data on incineration (such as of clinical wastes). Organics data questionable.
Split of municipal waste from household and other municipal wastes	Little to no capacity to split municipal waste data into its component parts.
Waste to landfill, wastewater & waste incineration related emissions of greenhouse gas	Generally good data, within limitations of emissions estimation methods. Quality problems exist around waste composition data.
Reporting against collection type	Reasonable data, with some coverage gaps, exists for key household collections (kerbside recycling, kerbside disposal, some green waste) but data quality is poorer for other collection types (such as bulky municipal waste, or C&I collections).
Composition of municipal waste	Some data exists in some jurisdictions for composition of household (if not municipal) waste, mostly derived from kerbside audits. No nationally-consistent materials typology is used, nor is a standard compositional audit method. Composition data at point of landfill disposal is poor.

Source: Australian Government, Department of Sustainability, Environment, Water, Population and Communities, 2012.



In respect of the Group 1 international obligations, the Basel Convention is implemented at the national level by the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* and the import and export of wastes covered by the Convention are managed under a notification and permit system by DSEWPaC. The permit arrangement provides a direct source of information on international movements of hazardous waste for reporting purposes. However, reporting arrangements under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* do not provide information in respect of waste generation; the provision of waste management facilities; efforts to reduce waste; or the movement of wastes within or between states or territories.

Although the Controlled Waste NEPM does not have a statutory relationship to the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* (or the Basel Convention), reporting under this NEPM has some potential to provide the basis for a national waste data and classification system which could align with Australia's international waste-related reporting obligations. However, existing waste classification and reporting arrangements under the Controlled Waste NEPM fall short of the needs of the Basel Convention (and related agreements).

The Stockholm Convention requires that wastes containing chemicals specified under the Convention be handled, collected, transported, stored and disposed of in accordance with the requirements of the Convention. Basel Convention obligations are to be taken into account with respect to environmentally sound disposal and transport across international boundaries. Specific requirements exist for polychlorinated biphenyls (PCBs) and listed polybrominated diphenyl ethers. Reporting requirements centre on volumes of chemicals and wastes traded and/or destroyed as well as information sharing on technologies, techniques and processes used. There is no single piece of legislation giving effect to these obligations but a range of legislative instruments dealing with industrial chemicals, pesticides and scheduled wastes are relevant.

The OECD Waste Indicator Reporting obligations are not covered by specific national legislation or arrangements. It appears that OECD Waste Indicator reporting is reliant upon a variety of data sources, which implies that verification of individual data sets may be difficult and time consuming.

With respect of the OECD Control System for Waste Recovery, waste tracking and reporting arrangements are covered by the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*. However, there is some concern that the integrity of reporting of international movements of wastes for recovery may be complicated by variations in the physical state and/or composition of the waste that is destined for recovery.

The reporting of waste-related information under the UN Framework Convention on Climate Change and the Kyoto Protocol is adequately addressed by arrangements under the *National Greenhouse Gas Inventory Act 1997* and the *National Greenhouse and Energy Reporting Act 2007*.

With regard to the Group 2 international obligations, waste is excluded from the Rotterdam Convention. The Waigani Convention is a multi-lateral agreement under Article 11 of the Basel



Convention, and as such imports of waste covered by the Convention should be captured through arrangements under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*.

Since 2002, waste-related reporting in respect of obligations to the UN Commission on Sustainable Development (CSD) (including Agenda 21) has been in response to themes covered by individual CSD Cycles. National reports to the Commission on Sustainable Development are provided on a voluntary basis. Given the variation in CSD reporting requirements, there is no specific federal legislation or reporting arrangements in place, and any responses made to requests for information from the Commission are likely to draw upon a variety of formal and informal reports and data sets.

Similarly the Global Methane Initiative has no formal reporting requirements; although the Australian Government has submitted a country specific profile in respect of the nation's landfills and landfill gas projects.

With the exception of the Bilateral Agreement with East Timor on the Import of Hazardous Waste for Disposal in Australia, which is managed under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*, the Group 3 international obligations are managed under administrative arrangements overseen by federal government departments or their agencies.

6.3. State and Territory arrangements for the management and reporting of wastes

In respect of the definition of wastes, hazardous wastes and other wastes, the state and territory governments have implemented legislation and arrangements that define waste and classify different waste types. However, the variation in definitions of waste and classification of waste types between jurisdictions has significant implications for the collection, collation, analysis and reporting of waste in respect of Australia's international obligations. The current use of different definitions of waste and waste classification systems by individual jurisdictions, can only lead to inefficiencies and gaps in waste data reporting by state and territory authorities to the national bodies responsible for reporting against Australia's international obligations. Currently there is no formal mechanism for reporting the types and quantities of different waste streams that arise within the states and territories.

With regard to the tracking and reporting of movements of hazardous wastes between states and territories, the Controlled Waste NEPM provides an effective system that is used by all states and territories, although there is variation between jurisdictions in how this information is recorded and stored. Of itself the Controlled Waste NEPM does not capture information about all of the hazardous waste types that are listed in Annex I of the Basel Convention. Moreover the Controlled Waste NEPM does not capture information about interstate movements of Annex II wastes under the Basel Convention (household waste, and residues from the incineration of household waste).



In respect of collecting information about the activities to reduce or eliminate hazardous and other wastes, and the number and types of disposal or recovery facilities that are operated within Australia, as is required by the Basel Convention, again there is no formal mechanism by which this information is collected and reported by the individual jurisdictions. Similarly Australia also has no formal mechanism at the state and territory level to collect information in respect of the generation of household, municipal, hazardous and nuclear waste as required by the OECD waste indicator reporting obligations.

6.4. Forward look at international obligations

6.4.1. E-Waste

Electrical and electronic waste (also known as e-Waste or waste electrical and electronic equipment [WEEE]) contains a range of potential harmful components and materials. Worldwide, e-waste is a growing waste stream, with concerns being raised about international trade in these wastes. In March 2012 the Secretariat of Basel Convention (SBC) and International Telecommunication Union (ITU) signed an agreement aimed at protection of the environment from the effects of e-waste. The ITU-SBC collaboration seeks to collect and recycle the hazardous materials by introducing safeguards in the management of e-Waste. In addition, the Secretariat for the Basel Convention is currently preparing specific guidance on e-waste, including a major piece of work on the classification of e-waste for recovery, direct reuse, or as waste items, and the OECD has prepared guidance on the environmentally sound management (ESM) of used and discarded personal computers. This work, once completed, may eventually impact on the reporting requirements for e-waste and management of e-waste under the Basel Convention and OECD protocol on transboundary movement of waste.

As electronic waste is being considered at an international level, early consideration should be given to the inclusion of this waste stream in national definition and classification systems that are to be used in Australia. Consideration should also be given to how information on e-waste is gathered for national reporting systems on waste generation and recycling.

6.4.2. The Globally Harmonised System of Classification and Labelling of Chemicals

The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is a new chemical classification system developed by the United Nations (UN). The aim of the GHS is 'to have, worldwide, the same criteria for classifying chemicals according to their health and environmental effects and physical hazards; and hazard communication requirements for labelling and safety data sheets'¹⁴. The new GHS system does not match the systems that are currently used whether those systems are within waste legislation such as the Basel Convention, or within transport legislation such as the ADR15 international goods transportation agreement. As the GHS

¹⁴ UK, Health and Safety Executive (HSE) Guidance, www.hse.gov.uk/ghs.index.htm

¹⁵ European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)



system is a UN level document, and its preparation has included input from nations (including Australia), the European Union and the OECD, it is likely that any international agreements that are based upon the hazardous properties of chemicals will be revised to reflect the new system. This may lead to additional materials being covered under the revised arrangements. For example, the GHS could impact upon the Basel Convention and the OECD protocol on the transboundary movement of waste, which would have further implications for federal and state definitions of hazardous waste and their associated reporting requirements.

7. Recommendations

This study has been undertaken to provide part of the evidence base to support National Waste Policy reforms: specifically the introduction of a national definition and classification system for waste that aligns with definitions in international Conventions (Strategy 4); and the development of a national waste data system and publication of a three-yearly current and future trends waste and resource recovery report – the National Waste Report (Strategy 16). The findings of this study re-confirm the need for these strategies and reforms.

In addition, it is recommended that the Australian Government gives consideration to undertaking the following:

- 1) An investigation of potential mechanisms for introducing national definitions and classifications for waste and recovered resources at the state and territory level
- 2) An investigation of the potential to develop a conversion system that effectively interprets existing state and territory waste definitions and classifications so that they can be easily and accurately aligned with national and international definitions and classifications
- 3) A detailed review of existing state and territory arrangements for hazardous waste data collection and reporting, including but not limited to the Controlled Waste NEPM, covering -
 - the type and scope of information that is currently collected and held by individual state and territory environmental protection agencies
 - the quality, integrity and availability of this data
 - alignment with international waste-related reporting obligations
 - options to address any data gaps to better meet these international reporting obligations (including options that may involve the Controlled Waste NEPM).



Appendix A References

Department of Sustainability, Environment, Water, Pollution and Communities, *National Waste Report* 2010

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Hyder Consulting, *Waste Classification in Australia*, prepared for Department of Sustainability, Environment, Water, Pollution and Communities, December 2011

Hyder Consulting, *Liquid Waste Assessment*, prepared for Department of Sustainability, Environment, Water, Pollution and Communities, April 2012

Appendix B Convention and Treaty summaries

Treaty/Framework Name	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. Australia is an accession signatory ¹⁶ to the Convention.
Date of Treaty/Framework Date of Australia's Signature Date of Entry into Force in Australia	The original treaty was signed on 22 nd March 1989, with it coming into force on 5 th May 1992. A number of amendments have since been passed, with major additions being passed in 1995 and 1998. Australia signed the treaty on 5 th February 1992, with the treaty implemented in Australia under the <i>Hazardous Waste (Regulation of Exports and Imports) Act 1989</i> , and the <i>Hazardous Waste (Regulation of Exports and Imports) Regulations 1996</i> statutory rules 284
Secretariat	Secretariat of the Basel Convention 11-13, Chemin des Anémones - 1219 Châtelaine, Switzerland Tel.: +41 (0)22 917 8218 - Fax: +41 (0)22 797 3454
Related to	The Waigani Convention has a similar purpose and uses many of the same terms and measurements. The Stockholm Convention requires movements of waste to comply with the Basel Convention.
Brief summary of purpose <p>The Convention aims to control international movements of hazardous waste, specifically by aiming to ensure that hazardous wastes are dealt with as far as possible within their country of origin, and protecting vulnerable countries from unwanted imports. This is achieved through the introduction of a regulatory system, based upon 'prior informed consent' for transboundary movements of hazardous wastes, while not adversely interfering with the legitimate trade in secondary raw materials. The Convention also seeks to reduce the volume of hazardous wastes produced and their environmental impacts. The promotion of environmentally sound management of hazardous waste is important along with a restriction of transboundary movements of waste except where it is in accordance with environmentally sound management.</p>	
Primary dataset(s) required	<p>The Convention requires annual reporting of international waste movements by states to the Secretariat (the responsibilities of the Secretariat are set out in Article 16).</p> <p>Article 4 sets out the general requirements of the treaty, along with reporting requirements, which are set out in more detail in Article 13.</p> <p>Article 13 lays out the specific reporting requirements. Some are generic requirements, others relate directly to consented waste movements:</p> <p>Generic requirements-</p> <ul style="list-style-type: none"> ■ Confirmation of the relevant competent authority and the contact details ■ Efforts to reduce the volume of wastes (by means of minimisation or avoidance) subject to transboundary movements ■ Measures on the implementation of the Convention ■ Qualified statistics compiled on the effects on human health and the environment from the generation, transportation, and disposal of wastes (see later) ■ Information on any bi or multi lateral agreements, or regional agreements entered into

¹⁶ "Accession" is the act whereby a state accepts the offer or the opportunity to become a party to a treaty already negotiated and signed by other states. It has the same legal effect as ratification. Accession usually occurs after the treaty has entered into force (United Nations definitions).

	<ul style="list-style-type: none"> Information on disposal and treatment options in their country. <p>Waste movement specific requirements-</p> <ul style="list-style-type: none"> Information on exports including, volumes (no units stated); category; physical characteristics (form); destination; identity of any transit countries; disposal method. All information should be as stated on the notification document Information on imports including; origin; disposal method; quantities, category and physical characteristics Disposals that have not proceeded as intended (see below) Information on any accidents involving Convention wastes and how they were dealt with. <p>Disposals which have not proceeded as intended are those where the consented movement has not been fully complied with. This may be due to rejection of loads due to changes in composition, issues with the receiving site or transport related incidents including changes of routing.</p> <p>Most annual reporting to the Secretariat carried out under Article 13 by national governments is based upon the information on movement notification forms sent to the competent authority for approval of imports or exports, linked to information on the actual amount of waste moved contained within the movement forms. Each import or export will have an individual notification form which give permission for the movement and can cover multiple loads provided the waste stream, fate and routing are the same. Individual loads will then be accompanied by a movement form, with a new form for each load.</p> <p>The template movement and notification forms are available at: http://www.basel.int/Portals/4/Basel%20Convention/docs/techmatters/forms-notif-mov/vCOP8.pdf</p> <p>Therefore, the required dataset has three components:</p> <ul style="list-style-type: none"> Information from the notification forms which detail the point of origin, waste description, form, fate and hazardous properties Information from the movement form which details the exact amount of waste moved under the notification Information on any issues or accidents which have occurred. This will be an ad hoc reporting system. <p>The qualified statistical reporting has no agreed format. The guidance manual for reporting (http://www.basel.int/Portals/4/Basel%20Convention/docs/natreporting/manual/manual-e.pdf) states:</p> <p><i>Provide information on any available statistics, studies, monitoring reports, etc. that have been compiled on the effects of the generation, transportation and disposal of hazardous wastes and other wastes on human health and the environment, for example:</i></p> <ul style="list-style-type: none"> <i>statistics/studies on occupational health effects on people who work in factories, landfills or other waste disposal facilities or factories where they come into contact with hazardous wastes;</i> <i>epidemiological studies on the population living close to landfills or other waste disposal facilities where the health of the population is being followed during a longer period of time; and</i> <i>monitoring reports on the environmental effects of landfills or other waste disposal facilities or waste producing factories, e.g. effects on animals, vegetation, surface waters, ground water, air quality, soil quality, etc.</i> <p><i>Specify the activities, effects, regions, and period covered by the statistics, studies or monitoring reports concerned. Indicate also appropriate references and contact details for the sources of this information/data.</i></p> <p>The Basel questionnaire on 'Transmission of Information' is divided into two parts, Part I on the Status of Information and Part II on Annual Reporting. Part I covers issues that typically remain the same from year to year and require yes/no</p>
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	<p>answers, e.g. around national definitions of waste, hazardous waste, control procedures, action to reduce waste or hazardous waste, etc. Part II covers the information that must be reported on an annual basis, divided into Section A and B. Section A covers the export/import of hazardous waste and other wastes and generation of other and hazardous wastes. Part B relates to disposals that did not proceed as intended and accidents occurring during transboundary movements.</p> <p>Table 6 – requires total amounts of hazardous waste and other wastes exported. Hazardous waste is divided into waste under Art 1 1(a) Annex I Y1-Y45 and Art 1 1(b) Other waste is defined as those in Annex II Y46-47 which is household waste and residues from the incineration of household wastes. Wastes are reported by individual Y code, identifying hazardous characteristics, amount exported, country of transit, country of destination, final disposal and recovery operation.</p> <p>Table 7 requires the total amount of hazardous waste and other wastes imported. The detail is as described above.</p> <p>Table 8a – Total amount of generation of hazardous wastes and other wastes, this is the total amount divided up according to the three categories above.</p> <p>Table 8b – Total amount generated of hazardous waste and other waste by waste stream Y categories Y1-18 and wastes having as constituents Y19-Y45 and Y46-47.</p> <p>Data reporting by individual countries within the Basel database varies in terms of compliance with this. Some countries do not report, others refer to national databases of hazardous materials and some refer to databases of sites. The Australian reporting in 2009 listed national and state level EPA websites where further information could be obtained.</p>
Dependent datasets	<p>The datasets required relate to the international movements of waste, but some of the data is also required for reporting to other bodies (such as Stockholm and Waigani). Stockholm in particular has different unit requirements.</p> <p>Datasets are needed for both agreed movements and also for the reporting of incidents which have occurred.</p>
Relevant definitions and classifications used	<p>Wastes are defined in Article 2 of the Convention as <i>'substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law'</i>.</p> <p>The Convention states that the following wastes that are subject to transboundary movement shall be "hazardous wastes" for the purposes of this Convention:</p> <p>(a) Wastes that belong to any category contained in Annex I, unless they do not possess any of the characteristics contained in Annex III; and</p> <p>(b) Wastes that are not covered under paragraph (a) but are defined as, or are considered to be, hazardous wastes by the domestic legislation of the Party of export, import or transit.</p> <p>Hazardous waste is therefore defined in a number of ways.</p> <p>Annex I includes a list of wastes which have been allocated 'Y' codes. There are 45 of these. Numbers 1 – 18 are types of waste, some based on generic terms such as 'clinical waste' or 'mineral oils unfit for original use' others are generic descriptions of materials resulting from the manufacture, formulation and use of chemicals, including photographic chemicals and inks. Numbers 19 – 45 are chemical species such as 'cadmium; cadmium compounds'. These materials are deemed hazardous unless, they do not display the hazardous properties in Annex III of the Convention. Annex III is the list of hazardous properties for transport legislation, based upon the ADR system.</p> <p>Following amendments to the Convention in 1998, further wastes were added so that wastes listed in Annexes VIII and IX of the Convention which require control and notification are also considered hazardous. Each waste is assigned a code and Annex VIII codes are automatically deemed hazardous under the Convention and require notification and informed consent prior to movements occurring.</p>

	<p>Annex IX are wastes which are covered by the Convention only if they have certain substances within them, or originated from specified processes and exceed the relevant thresholds to be hazardous for the purposes of transport. Where they are deemed hazardous, they then require notification and informed consent prior to movements occurring.</p> <p>In order to ease classification, Annex VIII defines a series of wastes which fit within the Y codes (although they are not mapped to each other).</p> <p>Annex II wastes, household wastes and residues from the incineration of household waste should be given special consideration.</p> <p>Non hazardous wastes fall outside the scope of the Convention and can therefore be moved under national legislation requirements only. According to the preamble to the Convention, this is to ensure that the import of valuable secondary raw materials is not adversely affected by the Convention.</p> <p>Radioactive wastes are excluded from the scope of the Convention, as far as the materials are covered by other international legislation.</p> <p>Ship generated wastes are excluded as far as they covered by other legislation.</p> <p>Disposal is defined in the Convention text as all operations within Annex IV of the Convention, which includes both options which are traditionally seen as waste disposal such as landfill and incineration, but also waste recovery options such as recovery of metals, redistillation of solvents and use as a fuel.</p> <p>Certain information on waste movements, such as the units of quantity, are not defined within the Convention. However, the secretariat's website includes an example set of notification and movement documents. (Some information in this report has been taken from these documents).</p> <p>Recovery (R) and Disposal (D) codes are given in Annex IV of the Convention and detail the waste treatment or disposal operation for which hazardous wastes will be destined.</p> <p>The template notification and movement forms have a range of details on how to describe the waste. These include:</p> <ul style="list-style-type: none"> ■ Annex VIII or IX code for the waste. Annex VIII codes all start with 'A', Annex IX codes with 'B' and both then have a four digit identifying code. Annex XIII wastes are deemed hazardous (unless proven otherwise) and the list of wastes are split into a range of waste groupings based on contaminant type. Annex IX codes need to contain materials within the Y codes given in Annex I at a sufficient level to make them hazardous for transport (Annex III H codes) for them to be covered by the scope of the Convention. ■ OECD waste code (where they differ from the Basel code). ■ H-code (hazardous property code) which are defined in Annex III of the Convention. Hazardous properties are stated each with a specific 'H' codes, alongside the corresponding UN codes from the UN guidance on the transport of dangerous goods. The 'H' codes used do not fully match those used in the EU Dangerous Preparations Directive, (quoted in the Australian Approved criteria for classifying hazardous substances [NOHSC:10008(2004)] 3rd edition). They do appear to align with those used in the Australian Dangerous Goods Code for transport however. ■ Y code. These are given in Annex I of the Convention. They are Convention specific and consist of two groupings. Y1–18 relate to the source of the waste, either in terms of the sector (e.g. Y1 is clinical waste) or the type of process giving rise to the waste (e.g. Y17 wastes resulting from the surface treatment of metals and plastics) Y19–Y45 relate to specific chemicals or compounds within the waste. These codes appear to only be used within the Basel Convention. Annex II has two further Y codes, which require 'further consideration' before declaring if the waste is hazardous or not. ■ Countries of import and export, given in code form rather than in full (codes are given on the Convention's website and allow for cases where there is no single national approval point, but approvals are determined at a federal or
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	<p>state level).</p> <ul style="list-style-type: none"> UN name, class and code. These are from transport requirements. <p>Article 5 of the Convention requires the identification to the secretariat of the competent authority for the Convention in signatory states. If this authority changes, the secretariat must be informed.</p>
Unit(s)	<p>No units are stated in the Convention text itself. However, the transmission of information questionnaire states metric tonnes and m³ for quantities. Available reports are based upon these units. Reporting is requested in both hard and electronic formats.</p>
Reporting frequency	<p>Article 3 reporting requires an initial response to the Basel secretariat and then periodic updates, depending upon any changes to national definitions or requirements.</p> <p>Article 13 specifically covers the transmittal of information. This falls into two categories, annual planned reporting and ad-hoc reporting.</p> <p>Ad-hoc reporting covers:</p> <ul style="list-style-type: none"> Decisions to refuse in full or partial import of hazardous wastes for disposal or treatment Decisions to ban export of hazardous wastes for disposal or treatment Any other information requested by the Convention signatories that their conference (as referenced in Article 15) deem necessary Identification of nationally determined hazardous wastes not included within the Convention, and any specific requirements placed on these wastes (Article 3 requirement).
Date last reported	<p>Reporting should be annual and is by calendar year (e.g. Jan-Dec 2010) and reports are due by December of the following year (e.g. Dec 2011) which means there is a 1 year lag in the data.</p> <p>Requests for information are sent out in September each year with each country asked to submit by the end of the calendar year for the previous calendar year.</p> <p>http://www.basel.int/Procedures/NationalReporting/tabid/1332/Default.aspx</p> <p>According to the Basel Secretariat Australia last reported in May 2011 and provided data for 2009 (this is the most recent held on the Basel Secretariat website).</p> <p>Australia reported in April 2012 for the 2010 year.</p>
Reported by and contact details	<p>The designated Competent Authority and Focal Point to the Basel Convention is:</p> <p>Director, NPI & Hazardous Waste Section Department of the Environment, Water, Heritage and the Arts GPO Box 787 Canberra ACT 2601</p>
<p>Data sources used</p> <p>Basel Convention website : http://www.basel.int/</p> <p>The consolidated and up to date Convention text is on the website at: http://www.basel.int/Portals/4/Basel%20Convention/docs/text/BaselConventionText-e.pdf</p> <p>Template movement and notification forms are available at: http://www.basel.int/Portals/4/Basel%20Convention/docs/techmatters/forms-notif-mov/vCOP8.pdf</p> <p>The OECD waste list is available at: http://www.oecd.org/dataoecd/57/1/42262259.pdf</p>	
<p>Reporting issues</p> <p>The Basel Convention is implemented nationally via the <i>Hazardous Waste Act 1989</i> and the <i>Hazardous Waste (Regulation of Exports and Imports) Regulations 1996</i>. It is worth noting that the Basel Convention is also a schedule to the Hazardous Waste Act itself.</p> <p>A national framework system for tracking waste movements was set up via the controlled waste NEPM and then implemented by individual states and territories.</p>	



There needs to be a way of capturing any issues that have occurred with individual loads for the purposes of reporting.

The hazardous properties used are those from transportation legislation and not waste legislation.

Data is collected by DSEWPac (the competent authority) at various stages in the notification and authorisation process. The notification document will identify the proposed total volume for movement over 12 months and the agreed number of shipments. Each shipment should then be notified to the competent authority with the exact weight on, followed by a copy of the arrival notification from the receiving site. Because of Australia's geographical location, the delay here will be influenced by the point of origin and the method of transportation. This delay will be in the order of weeks. There will then be a recovery notification when the load has been recovered / recycled etc. However, there can be a time lag between delivery and treatment of up to six months.

Annually there will be data on what and how much hazardous material has been imported or exported, and within any 12 month period the records should show how much is either in transit or has been delivered. There may be a delay of up to 6 months on volumes recovered.

Summary of significance

The Basel Convention covers the import and export of a list of specified hazardous waste from signatory countries, using a system of 'prior informed consent'.

Consent is arranged via a designated point of contact, which in Australia is the national government.

Annual reports detailing the volumes of wastes imported and exported along with their disposal or treatment fate are required. These reports use the Basel Convention's own waste codes which are not the same as those used in other relevant Australian legislation.

Treaty/Framework Name	The Stockholm Convention on Persistent Organic Pollutants
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	The Convention was adopted on 22 nd May 2001, and came into force on 17 th May 2004, following gaining enough signatories. Australia signed the Convention on 23 rd May 2001. The Convention came into force in Australia on 20 th May 2004.
Secretariat	Secretariat of the Stockholm Convention 11-13, Chemin des Anémones - 1219 Châtelaine, Switzerland Tel.: +41 (0)22 917 8729 - Fax: +41 (0)22 917 8098
Related to	In relation to wastes, the Stockholm Convention requires parties to: <ul style="list-style-type: none"> • Develop appropriate strategies to identify wastes containing or contaminated with listed chemicals and products and articles upon becoming wastes containing or contaminated with listed chemicals. • Take appropriate measures so that wastes, including products and including products and articles upon becoming wastes, are handled, collected, transported and stored in an environmentally sound manner; • Take appropriate measures so that wastes, including products and including products and articles upon becoming wastes are disposed of in such a way that the persistent organic pollutant content is destroyed or irreversibly transformed so that they do not exhibit the characteristics of persistent organic pollutants or otherwise disposed of in an environmentally sound manner when destruction or irreversible transformation does not represent the environmentally preferable option or the persistent organic pollutant content is low, taking into account international rules, standards, and guidelines, including those that may be developed, and relevant global and regional regimes governing the management of hazardous wastes; • Take appropriate measures so that wastes, including products and including products

	<p>and articles upon becoming wastes are not permitted to be subjected to disposal operations that may lead to recovery, recycling, reclamation, direct reuse or alternative uses of persistent organic pollutants;</p> <ul style="list-style-type: none"> • Take appropriate measures so that wastes, including products and including products and articles upon becoming wastes are not transported across international boundaries without taking into account relevant international rules, standards and guidelines; • Endeavour to develop appropriate strategies for identifying sites contaminated by chemicals listed in Annex A, B or C; if remediation of those sites is undertaken it shall be performed in an environmentally sound manner. <p>The Convention also contains detailed obligations in relation to identifying, labelling, handling and disposal of PCB wastes.</p> <p>For articles containing listed polybrominated diphenyl ethers, recycling is permitted subject to a number of specified conditions.</p> <p>Part V of Annex C includes obligations in relation to treatment of wastes so as to minimise the generation of unintentional produced chemicals listed in Annex C including dioxins.</p>
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Brief summary of purpose

The Convention intends to control, restrict and eventually eliminate persistent organic pollutants (POP's). Persistent organic pollutants are those which:

"possess toxic properties, resist degradation, bio-accumulate and are transported, through air, water and migratory species, across international boundaries and deposited far from their place of release, where they accumulate in terrestrial and aquatic ecosystems".

The Convention originally covered a list of 12 chemicals. This has now been expanded by a further 10 (see below), with discussions held over a number of other chemicals.

Chemicals covered by the Convention are listed either for:

- elimination (Annex A);
- restriction of use (Annex B); or
- preventing their unintentional manufacture (Annex C).

Some chemicals are listed in more than one annex. Specified authorised uses are allowed for some materials covered by the treaty. Permitted uses for Annex A chemicals include the use of lindane as a human health pharmaceutical for control of head lice and scabies as second line treatment and the use of endosulfan as a pesticide for certain crop pest combinations. The recycling of articles containing listed polybrominated diphenyl ethers is permitted subject to specified conditions. There are two Annex B chemicals, DDT and perfluorooctane sulfonate and related substances (PFOS). DDT is permitted to be used for disease vector control according to specified conditions. PFOS is permitted to be used for 20 specified applications subject to part III of Annex B of the Convention.

Original 12 POP's	Annex
Aldrin	A
Chlordane	A
DDT	B
Dieldrin	A
Endrin	A
Heptachlor	A
Hexachlorobenzene (HCB)	A and C
Mirex	A
Toxaphene	A
Polychlorinated biphenyls (PCB)	A and C
Polychlorinated dibenzo-p-dioxins (PCDD)	C

Polychlorinated dibenzofurans (PCDF)	C
Additional 10 POP's	Annex
Alpha hexachlorocyclohexane	A
Beta hexachlorocyclohexane	A
Chlordecone	A
Hexabromobiphenyl	A
Hexabromodiphenyl ether and heptabromodiphenyl ether (commercial octabromodiphenyl ether)	A
Lindane	A
Pentachlorobenzene	A and C
Perfluorooctane sulfonic acid, its salts and Perfluorooctane sulfonyl fluoride	B
Technical endosulfan and its related isomers	A
Tetrabromodiphenyl ether and pentabromodiphenyl ether (commercial pentabromodiphenyl ether)	A

The Convention applies to chemicals, but Article 6 of the Convention, which deals with waste, specifically covers both stockpiles and items containing or contaminated with Annex A and B chemicals.

Once materials in Annex A or B are no longer usable under a registered exemption from the Convention or have no suitable use, they are deemed wastes within the Convention and they need to be handled accordingly. Where they are disposed of, and this needs to be in a manner which either destroys the chemical or irreversibly transforms it into a non-Convention chemical. No recycling, recovery or reuse options are allowed for wastes covered by the Convention except there is an exemption for recycling of articles containing tetrabromodiphenyl ether and pentabromodiphenyl ether, and hexabromodiphenyl ether and heptabromodiphenyl ether.

Controls also need to be in place to prevent the formation of Annex C chemicals, both from the destruction of other Convention chemicals and in general from waste management.

Waste imports and exports are explicitly required to be in accordance with the Basel Convention.

Primary dataset(s) required	<p>Article 15 reporting is via a specific electronic document.</p> <p>The reporting covers a range of subjects, some are yes / no answers which open additional menus. They mainly relate to the implementation of policies / procedures in line with the Convention.</p> <p>Data on waste disposal are required, irrespective of the point of origin.</p> <p>Data on any stockpiles of Convention chemicals are required.</p> <p>Volume of imported wastes and source is needed and data on emissions of Annex C chemicals by year and source is required.</p> <p>Data for the Article 15 report is collated from, the National Pollutant Inventory, Customs, states and territories and industry.</p> <p>In addition, typically four to eight chemical specific questionnaires are received each year. Where available, data for these is obtained from within DSEWPaC, DAFF/APVMA, DoHA and NICNAS.</p>
Dependent datasets	<p>Data on releases is reported from the National Pollution Inventory (Pollutant release and transfer register).</p> <p>Data on volumes of Convention chemicals disposed of and by which means.</p> <p>Data on stockpiled Convention material.</p> <p>Data on sites contaminated with POP's which have been identified and those which have been cleaned up.</p>
Relevant definitions and classifications used	<p>All chemicals are identified in terms of their names and CAS numbers (chemical abstracts number). Where several chemicals are covered by the same name, all isomers are identified in the text, e.g.:</p>

	<p><i>Hexabromodiphenyl ether and heptabromodiphenyl ether” means 2,2',4,4',5,5'-hexabromodiphenyl ether (BDE-153, CAS No: 68631-49-2), 2,2',4,4',5,6'-hexabromodiphenyl ether (BDE-154, CAS No: 207122-15-4), 2,2',3,3',4,5',6-heptabromodiphenyl ether (BDE-175, CAS No: 446255-22-7), 2,2',3,4,4',5',6-heptabromodiphenyl ether (BDE-183, CAS No: 207122-16-5) and other hexa- and heptabromodiphenyl ethers present in commercial octabromodiphenyl ether (from Annex A)</i></p> <p><i>Hexachlorobenzene (HCB) (CAS No: 118-74-1) (from Annex C)</i></p> <p>There is no clear definition of 'waste' within the Convention text. However, the Convention does refer to the Basel Convention, so the definition of waste from that may be applicable.</p>
Unit(s)	Reporting uses kg.
Reporting frequency	<p>Reporting on the implementation of the Convention is required under Article 15. The timing is set at meetings of the signatories. Presently this is a four yearly report, using an agreed electronic reporting tool which is available from the secretariat's website. The second reporting period ended 31st July 2011, although this was an extension from the original deadline of 31st October 2010. The next report is to be by the 31st August 2014. The reports need, inter alia:</p> <ul style="list-style-type: none"> ■ Statistical data on the production, import and export of Annex A and B chemicals. Where data is not available, reasonable estimates should be used. ■ Identities of any countries where imports and exports involving any Convention POPs have taken place. ■ Data on the volume of listed chemicals destroyed. <p>The reporting is via an electronic tool, much of which is yes / no questions with qualifiers. The second report was divided into Parts A-D. Part A was a general section, Part B covered progress on implementing the provisions of the Convention and Part C on progress towards eliminating the use of PCBs. Part D was a section in which to add additional information.</p> <p>Part A – included details of the reporting period, the date submitted and by whom.</p> <p>Part B</p> <p>Question 10 covered information on estimation of annual releases of Annex C chemicals. This section also included releases of chemicals from a range of source categories, which from a waste point of view include waste incineration, heat and power generation, waste disposal, open burning processes and miscellaneous. Units are either g TEQ/a or kg/a depending on the POP chemical. These source categories are consistent with the UNEP Dioxin/Furan reporting toolkit. Waste incineration includes the sub categories of MSW, hazardous, medical, shredder waste, sewage sludge, waste wood and waste biomass and animal carcass incineration. Heat and Power generation includes fossil fuel power plants, biomass power plants, landfill and biogas production, household biomass heating and fossil fuel domestic heating. Open burning includes biomass fires or burnings and waste fires, landfill fires, waste burning or accidental fires. Disposal includes – leachate from hazardous and non hazardous landfill, sewage sludge treatment, open water dumping, composting and waste oil disposal. Plus any waste residues from production processes such as metal, mineral, chemical production and transportation.</p> <p>For Australia this section has been completed using the Australian National Pollutant Inventory (Pollutant Release and Transfer Register).</p> <p>Questions 17 to 22 covered measures to reduce or eliminate releases from stockpiles and wastes, these are all yes/no or multiple choice questions.</p> <p>Questions 24 and 25 referred to permitted exports and imports of chemicals respectively. Although these answers included permitted use imports and exports, generally for specified pesticide uses, some entries refer to 'final disposal', particularly with regard to imports from South Pacific nations, e.g. the Solomon Islands and Vanuatu. The remainder of Part B covered technical assistance given to other nations, financial information, education and R&D activity primarily via multiple choice questions.</p> <p>Part C, was primarily yes/no questions relating to activity to reduce the use of PCBs and reducing stockpiles and developing appropriate strategies. Question 18 requested details</p>



	<p>on the amount of PCBs (>50ppm) containing oils and equipment that have been destroyed (in kg). Question 19-20 is similar, but refers to amounts of PCBs oil and equipment imported and exported for destruction.</p> <p>There were also questions relating to the adoption of measures for the control of POPs including in wastes, within Part C of the response.</p> <p>The second report format differed from the first and the next report format is likely to be different again. The next report will cover 22 chemicals rather than 12.</p> <p>A national implementation plan must be communicated to the secretariat. Australia transmitted its plan in August 2006.</p> <p>In addition to the Article 15 reports, typically four to eight ad hoc chemical specific questionnaires are received each year.</p>
Date last reported	Australia reported on the 11 th February 2011 – contact details as below. The period covered was 01/01/2006 to 31/12/2009.
Reported by and contact details	<p>Official contact point for reporting given by the Secretariat website is:</p> <p>Assistant Secretary The Department of the Environment, Water, Heritage and the Arts Environment Protection Branch GPO Box 787 Canberra ACT 2601</p> <p>The same address is also listed as the official national focal point for information exchange</p> <p>It is understood this information is out of date and the relevant department is now the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC).</p>
Data sources used Stockholm Convention website at: http://chm.pops.int/ Convention text and published second reports from the website	
Data gaps/issues Due to data gaps, some of the data requested in the Article 15 reports and the ad hoc questionnaires cannot be provided. Some of the ad hoc questionnaires received each year are not relevant to Australia and these are not completed.	
Summary of significance The Stockholm Convention covers a range of persistent organic pollutants whose manufacture is to be stopped and use phased out, as well as a number of identified organic by products of thermal treatment operations whose prevention must be avoided. Reporting on the chemicals of interest includes information on listed chemicals and chemicals under consideration for listing as well as items, products or land contaminated by them and how these have been addressed. Only two rounds of Article 15 reporting have been carried out for the Convention, but the report requirements expanded between the two rounds and the reporting requirements are decided by signatory members at conference. Additional chemicals have been added to the Convention and others are under discussion for addition to the Convention, increasing reporting requirements. Australia has commenced the process for dealing with ten new pollutants through the process of a regulatory impact assessment and national interest analysis. Consultation began in December 2010.	

Treaty/Framework Name	The OECD (Organisation for Economic Co-operation and Development) Control System for Waste Recovery
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	The original system was established on 14 June 2001 by the Council Decision C(2001)107/FINAL concerning the Control of Transboundary Movements of Wastes Destined for Recovery Operations. It was amended in 2002, 2004, 2005 and the latest version is dated 2008 C(2008)156. Australia joined the OECD in 1971 and the system came into force in 2001.
Secretariat	There is no specific secretariat identified on the OECD website. The general address given is: OECD, 2, rue André Pascal 75775 Paris Cedex 16, France
Related to	Linked to the Basel Convention although the OECD system covers a larger range of wastes.
Brief summary of purpose <p>The OECD system is an expansion of the Basel Convention and covers a wider range of wastes than the Basel Convention. (It is deemed a multilateral agreement between nations under Article 11.2 of Basel and was prepared as such). The purpose for the OECD system is:</p> <p><i>'(The) Control System aims at facilitating trade of recyclables in an environmentally sound and economically efficient manner by using a simplified procedure as well as a risk-based approach to assess the necessary level of control for materials. Wastes exported outside the OECD area, whether for recovery or final disposal, do not benefit from this simplified control procedure'.</i></p> <p>The OECD system has a slightly different approach to that in Basel, originally being based upon a three tier 'traffic light' level of waste controls. However, the 'red list' of wastes whose export was banned has now been removed from the system, but the other two tiers retain their nomenclature as having green and amber levels of control. According to the OECD:</p> <p><i>'The OECD Control System is based on two types of control procedures:</i></p> <ol style="list-style-type: none"> <i>1. Green Control Procedure: for wastes that present low risk for human health and the environment and, therefore, are not subject to any other controls than those normally applied in commercial transactions;</i> <i>2. Amber Control Procedure: for wastes presenting sufficient risk to justify their control'.</i> <p>'Green' controls apply to a range of non-hazardous wastes suitable for export, including materials such as paper, plastics and specified metallic wastes. 'Green' controls are normal commercial controls only to allow waste exports or imports for recovery / recycling. As these wastes are deemed non-hazardous, they do not need notification to the relevant competent authority or 'prior informed consent'. This lack of notification and consent means that data on these movements is difficult to obtain.</p> <p>Hazardous waste movements are undertaken under the 'amber' level of control process, which is a similar system to the Basel Convention. However, there are additional requirements, such as need for a contract between the parties involved, and requires a financial guarantee to be in place to enable the environmentally sound treatment of wastes whose recovery or disposal does not proceed as planned.</p> 	
Primary dataset(s) required	No direct reporting requirements – see Basel Convention
Dependent datasets	No direct reporting requirements – see Basel Convention
Relevant definitions and classifications used	<p>Waste are defined as <i>'substances or objects, other than radioactive materials covered by other international agreements, which:</i></p> <ol style="list-style-type: none"> <i>i) are disposed of or are being recovered; or</i> <i>ii) are intended to be disposed of or recovered; or</i> <i>iii) are required, by the provisions of national law, to be disposed of or recovered'.</i> <p>Transboundary movements are: <i>'any movement of wastes from an area under the national jurisdiction of a Member country to an area under the national jurisdiction of another Member country'.</i></p>

	<p>The definition of waste is based on the destination of the material, i.e. whether the material is destined for disposal/recovery or not. A distinction is made between recovery (Appendix 5B, 13 operations listed as recovery) and disposal (Appendix 5A, 15 operations listed as disposal) which is different to Basel as it defines disposal as covering disposal and recovery. The OECD decision only covers waste destined for recovery. Waste destined for disposal will be covered by Basel or relevant national legislation. Radioactive waste is excluded.</p> <p>Disposal includes all such disposal operations that occur in practice, whether or not they are adequate from the point of view of environmental protection.</p> <ul style="list-style-type: none"> ■ D1 Deposit into or onto land, (e.g. landfill, etc.) ■ D2 Land treatment, (e.g. biodegradation of liquid or sludgy discards in soils, etc.) ■ D3 Deep injection, (e.g. injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.) ■ D4 Surface impoundment, (e.g. placement of liquid or sludge discards into pits, ponds or lagoons, etc.) ■ D5 Specially engineered landfill, (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.) ■ D6 Release into a water body except seas/oceans ■ D7 Release into seas/oceans including sea-bed insertion ■ D8 Biological treatment not specified elsewhere in this Appendix which results in final compounds or mixtures which are discarded by means of any of the operations in this list ■ D9 Physico chemical treatment not specified elsewhere in this Appendix which results in final compounds or mixtures which are discarded by means of any of the operations in this list, (e.g. evaporation, drying, calcination, etc.) ■ D10 Incineration on land ■ D11 Incineration at sea ■ D12 Permanent storage (e.g. emplacement of containers in a mine, etc.) ■ D13 Blending or mixing prior to submission to any of the operations in this list ■ D14 Repackaging prior to submission to any of the operations in this list ■ D15 Storage pending any of the operations in this list. <p>Recovery includes all such operations with respect to materials considered to be or legally defined as wastes and which otherwise would have been destined for operations defined under 'Disposal'.</p> <ul style="list-style-type: none"> ■ R1 Use as a fuel (other than in direct incineration) or other means to generate energy ■ R2 Solvent reclamation/regeneration ■ R3 Recycling/reclamation of organic substances which are not used as solvents ■ R4 Recycling/reclamation of metals and metal compounds ■ R5 Recycling/reclamation of other inorganic materials ■ R6 Regeneration of acids or bases ■ R7 Recovery of components used for pollution abatement ■ R8 Recovery of components from catalysts ■ R9 Used oil re-refining or other reuses of previously used oil ■ R10 Land treatment resulting in benefit to agriculture or ecological improvement ■ R11 Uses of residual materials obtained from any of the operations numbered R1-R10 ■ R12 Exchange of wastes for submission to any of the operations numbered R1-R11 ■ R13 Accumulation of material intended for any operation in this list. <p>Most other definitions are those used in the Basel Convention. For waste streams there are the Y codes in Annex I of Basel (but not those in Annex II); H codes from transport legislation (but not UN classes); list of wastes.</p> <p>'Green list' wastes are not all in the Basel Convention list of waste, although they are</p>
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	<p>defined in a similar way to Basel. They have a 5 digit code, with the first letter being either 'B' or 'G'. Wastes which are defined in Annex IX of Basel, are included as 'green list' wastes (B code, followed by 4 digits). Annex IX is wastes which are not covered by the Basel Convention (first letter G followed by another letter and 3 digits), unless they are contaminated to a level which makes them hazardous. Green list wastes are listed in Appendix 3 of the OECD decision and do not typically exhibit hazardous characteristics and so are considered to pose a negligible risk to human health and the environment during transboundary movement. Part 1 includes the list of wastes from the Basel Convention and Part II the additional entries that are not listed in Basel.</p> <p>'Amber list' wastes are those from Basel (not listed just directly referenced), with additional codes added in a similar format to that for Green list wastes, although these start with an 'A'. Amber list wastes are listed in Appendix 4 of the OECD Decision. These wastes usually have one or more hazardous characteristics and may pose a risk to human health and the environment during transboundary movement for recovery. Appendix 4 is divided into those in Part I which are those wastes listed in the Basel Convention (annex II and VIII) Annex II contains Y46 (household waste) and Y47 (incineration residues from hhd waste) wastes which are only to be included in the OECD decision if they are contaminated by hazardous materials. Annex VIII entries have a 5 digit code, a letter and 4 numbers like in Basel. Part II contains those waste not listed in Basel but that might pose a risk to human health and the environment based on risk criteria set out in the OECD decision (Appendix 6). Entries identified by two letters, starting with either A or R and 3 numbers.</p> <p>The preamble to both the green and amber lists redefines a very small number of Basel Convention entries. These are related to coal fuelled power station ash, and scarp electronic and electrical wastes, where references to hazardous components have been removed. This redefinition is to simplify the process where wastes do not have hazardous properties.</p>
Unit(s)	No units directly given in the agreement text, although the sample movement and notification form use kg and litres.
Reporting frequency	No reporting requirements are specified, although as this document is linked to the Basel Convention, reporting will be in line with its requirements.
Date last reported	N / A
Reported by and contact details	N / A
Data sources used OECD Website: http://www.oecd.org The specific section on resource productivity and waste is at: http://www.oecd.org/topic/0,3699,en_2649_34395_1_1_1_1_37465,00.html The transboundary text is at: http://acts.oecd.org/Instruments/ShowInstrumentView.aspx?InstrumentID=221&InstrumentPID=217&Lang=en&Book=False	
Data gaps/issues There are minor differences between the Basel Convention and OECD lists. For example, the Y codes in Annex II in Basel are not included under the OECD system, nor are the UN codes for hazardous properties. Revised Green list wastes are given in Annex B and revised Amber list wastes in Annex C to the Guidance Document for the Control of Transboundary Movements of Recoverable Waste.	
Summary of significance The OECD system for transboundary movements of waste is very similar to the Basel Convention, however it covers a wider variety of wastes with explicit guidance on the movement of recyclates and non-hazardous wastes. There are operational differences between the two, particularly with regards to the control of some movements using 'commercial controls' rather than 'prior informed consent only', but direct reporting is only required under the Basel Convention.	

Treaty/Framework Name	The OECD (Organisation for Economic Co-operation and Development) Waste Indicator Reporting Requirements
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	The OECD reports on a range of environmental performance indicators of which waste generation forms one set of these indicators. The original recommendations on environmental indicators and information were adopted in 1991 by the OECD Council. The scope was updated in 2001. There is no formal Convention or Treaty in place covering this area. There are also a number of other OECD publications that request information relating to waste management activity.
Secretariat	There is no specific secretariat identified on the OECD website. The general address given is: OECD 2, rue André Pascal 75775 Paris Cedex 16 France
Related to	Stand alone
Brief summary of purpose <p>The OECD reports on a range of environmental indicators in order to track environmental progress and performance, inform policy development and to track sustainable development. Waste generation forms one of the key indicator sets.</p> <p>The OECD also reports environmental (including waste) information in a range of publications, the principle of which include:</p> <ul style="list-style-type: none"> ■ Environment at a Glance; ■ OECD Factbook ■ OECD Environment Data Compendium ■ OECD Environmental Outlook ■ OECD Regions at a Glance. <p>The OECD also holds environment and waste performance indicator information in various databases reported on the Statistical sections of the OECD website, principally the Environment Database (SIREN) which has specific waste pages along with online versions of the above publications and country reviews.</p>	
Primary dataset(s) required	OECD Key Environmental Indicators <ul style="list-style-type: none"> ■ The OECD Programme on environmental indicators was initiated in 1989. There are a number of different indicator sets; the Core Environmental Indicators are used to track environmental progress and are a set of approximately 50 indicators. ■ Key Environmental Indicators are a reduced set of the core environmental indicators that help inform policy makers and the general public. ■ Sectoral Environmental Indicators (SEI) are sector specific and designed to assist in policy making in specific sectors. These include indicators derived from environmental accounting. ■ Decoupling environmental indicators are designed to measure the degree of decoupling of environmental pressure from economic growth and typically derived from other indicators. <p>Indicator information is updated every year and countries are asked to report on a set of 'key indicators'. The indicators have been published regularly since 1991.</p> <p>The OECD Key Environmental Indicators cover topics such as climate change, ozone depletion, air quality, waste generation, forest resources and other natural resource uses. The core set of indicators relating to waste is concerned with waste generation for municipal, industrial, hazardous and nuclear waste. Movements of hazardous waste are also included.</p> <p>Municipal waste generation is reported as kg per capita and links are made to patterns of consumption by reporting as kg/ unit of private final consumption (PFC) kg/1000 USD.</p> <p>Environment at a Glance: OECD Environmental Indicators (various years)</p> <p>Waste indicators presented in this publication relate to waste generation (the key</p>

	<p>indicators);</p> <p>The total amount of waste by principal sectors (municipal, industrial, hazardous and nuclear waste). Waste generation is expressed in total tonnes, kg per capita and per unit of GDP (kg/1000 USD). Private final consumption expenditure per capita is also reported against which generation intensity per capita can be compared.</p> <p>Total amount of household waste generated in kg/capita is also reported.</p> <p>The management of municipal waste in terms of the % disposed of to recycling/composting, incineration and landfill is presented.</p> <p>Paper and glass reporting rates (% rates) are reported</p> <p>These data tables are the same as those reported in the OECD Environment Data Compendium below.</p> <p>OECD Factbook (2011-12 is the latest publication)</p> <p>The Factbook contains a section on Municipal Waste, kg of municipal waste and waste per capita are the datasets reported.</p> <p>OECD Environment Data Compendium (2006-2008) Waste</p> <p>This report is published every two years. Data within this report is provided by member countries through the OECD/Eurostat questionnaire on the State of the Environment. The data are harmonised through the work of the OECD Working Group on Environmental Information and Outlooks (WGEIO) and benefit from continued data quality efforts in OECD member countries, the OECD itself and other international organisations.</p> <p>Waste information is provided in a series of tables as follows;</p> <p><i>1A – Amount of waste generated by sector</i></p> <p>Waste produced by sectors of economic activity (agriculture, mining, manufacturing, energy production, water purification, construction). The division of sectors follows the International Standard Industrial Classification (ISIC) system revision 3.</p> <p>Data is provided in tonnes.</p> <p>In the 2008 report data for Australia was listed for manufacturing, construction and municipal streams only. Data was also listed as being for the 2002-03 financial year</p> <ul style="list-style-type: none"> ■ <i>1B - Amount of waste generated by selected waste stream</i> <p>Waste produced according to material characteristics, focussing on selected waste streams considered important from an environmental point of view. Waste streams covered are construction and demolition waste, dredge soil, sewage sludge, scrapped motor vehicles, used tyres and packaging waste.</p> <p>Data is provided in tonnes.</p> <p>In the 2008 report data for Australia was listed for construction and demolition, ELV, used tyres and synthetic oils only and for the year 2005.</p> <ul style="list-style-type: none"> ■ <i>2A – Generation of municipal waste</i> <p>Municipal waste is stated as being “waste collected by or on the order of municipalities”. (see below for full definition).</p> <p>Household waste is waste generated by the domestic activity of households, includes garbage, bulky waste and separately collected waste.</p> <p>Municipal and household waste expressed in total tonnes and kg/capita.</p> <p>Australia data is listed for 1980, 1990 and 2000 (although actually relates to 1978, 1992 and late 1990s) and the secretariat comments that it estimates that ‘municipal waste may contain significant amounts of commercial and industrial waste’.</p> <p>An addendum is reported containing data for 2006 in which household waste figures are reported for Australia.</p> <ul style="list-style-type: none"> ■ <i>2B – Composition of municipal waste</i> <p>Average % composition of municipal waste to total weight. The material categories given are for paper and paperboard, organic material, plastics, glass, metals, textiles and other.</p> <p>Australia data is composite information from state surveys done by SA, NSW, Tasmania, ACT, Victoria, WA and Queensland in different years between 1990-2005. The other category includes concrete (3%) and timber (1%).</p> <ul style="list-style-type: none"> ■ <i>2C – Disposal of municipal waste</i>
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	<p>The table contains information on total waste generation, % of the population served by municipal waste services, total tonnes recycling/composting, incineration with energy recovery, incineration and % landfilled.</p> <p>For Australia this data is provided for 2003 (based on the 2002-2003 financial year).</p> <p>■ <i>3 – Production, movement and disposal of hazardous waste</i></p> <p>Definitions used in these tables refer to the waste streams controlled by the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal.</p> <p>Data presented in total tonnes, for the amount produced, import, exports (actual amount moved) and treatment and disposal (including recovery, physio-chemical & biological treatment, thermal, landfill).</p> <p>For Australia, only data for Victoria in 1992 is presented.</p> <p><i>4A – Waste recycling rates; paper and cardboard</i></p> <p>Recycling is defined as “any reuse of material in a production process that diverts it from the waste stream, except reuse as fuel. Reprocessing as the same type of product and for different purposes are both included.”</p> <p>The recycling rate is presented as the ratio of the quantity collected for recycling to the apparent consumption (domestic production + imports – exports).</p> <p>Data is for the % recycled of apparent consumption for paper and cardboard.</p> <p>Information for Australia refers to newsprint, paper and card packaging; ratio of wastepaper collected to domestic consumption of paper. Data derived from information provided by Australia's six major paper manufacturing companies. Data for 1994 to 2005 is given.</p> <p><i>4B – Waste recycling rates; glass</i></p> <p>The recycling definition is the same as for Table 4A.</p> <p>Data is for the % recycled of apparent consumption for glass.</p> <p>The source of the Australian data is not provided. Data for 1992, 1995, 2000 and 2004 is given.</p> <p><i>5 – Waste treatment and disposal installations</i></p> <p>This table reports the number and capacity of waste treatment and disposal facilities. It reports on landfill sites, incineration plants and other treatment plants (which includes physical, chemical and biological treatment).</p> <p>Installations are divided between hazardous and non-hazardous facilities.</p> <p>Landfill sites – data reported is the number of sites and total remaining capacity in tonnes, total annual inputs in tonnes.</p> <p>Incineration plants - data reported is the number with energy reclamation, total annual capacity in tonnes, % with energy reclamation</p> <p>Treatment plants – number of plants and total annual capacity in tonnes</p> <p>Permanent storage – number of plants, total annual capacity in tonnes</p> <p>Other - number of plants, total annual capacity in tonnes</p> <p>No information is reported for Australia.</p> <p><i>6 – Nuclear waste: spent fuel arising</i></p> <p>Annual spent fuel arisings in nuclear power plants in OECD countries is reported. Data is expressed in tonnes of heavy metals.</p> <p>Spent fuel arisings are one part of the radioactive waste generated at various stages of the nuclear fuel cycle (which includes uranium mining and milling, fuel enrichment, reactor operation, spent fuel reprocessing).</p> <p>No information is reported for Australia.</p> <p>OECD Environmental Outlook to 2030</p> <p>Chapter 11 includes information on waste management trends. Data presented relates to the generation of municipal waste, total tonnes per year and kg per capita per year.</p> <p>The data for the core indicators is derived from data provided through the OECD/Eurostat questionnaire on the state of the environment which is provided by member countries on a biennial basis. The data is held in the OECD SIREN System of Information on</p>
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	<p>Resources and the Environment) database.</p> <ul style="list-style-type: none"> The State of the Environment Questionnaire Information is collected on a biannual basis. It requests information similar to that presented in the Environmental Data Compendium above. The data requested in the 2010 form is summarised here so that all categories are covered as it has a wider scope than that presented in the Data Compendium, data is reported in tonnes; TABLE 1 GENERATION OF WASTE BY SECTOR This table shows total amounts of waste generated in a country by the various sectors of economic activity and by households. It describes changes over time, as well as the share of hazardous (or special) waste for the most recent year available. The table refers to all primary waste originating from the mentioned sectors (agriculture, mining and quarrying, manufacturing industries, energy generation, water purification, construction) including waste for recovery and recycling, but excluding direct internal recycling and re-use. Waste from secondary sources (recycling industries) should be excluded, but can be reported as a memorandum item. The general sectoral breakdown used is taken from the International Standard Industrial Classification (ISIC.Rev.3), and the Statistical Nomenclature of Economic Activities in the European Community (NACE Rev1.). This allows for consistency with National Accounts and related economic data. <p>TABLE 2A/B GENERATION, RECOVERY AND RECYCLING OF SELECTED WASTE STREAMS</p> <ul style="list-style-type: none"> The selected waste streams include paper, glass, aluminium, lead, other non-ferrous metal, ferrous metal, plastic, Both tables refer to all waste generated, i.e. household and other municipal waste, waste handled by the scrapping industry and other waste from economic activities. Material that is collected for recycling by private sources (e.g. waste paper collected by private parties, etc.) should be included. Waste material undergoing internal recycling, i.e. directly at the place of generation, is excluded. Table 2a includes the amounts of recycled waste compared to total amounts of waste generated and to apparent consumption (national production + imports - exports) of the respective raw material. For selected waste streams, additional information on the amounts incinerated with energy recovery is requested. <p>Table 2b collects data on the generation of those waste streams that are not covered in table 2a, but considered of importance from an environmental point of view.</p> <ul style="list-style-type: none"> TABLE 3 GENERATION, TREATMENT AND DISPOSAL OF NON-HAZARDOUS INDUSTRIAL WASTE This table collects data on the amounts of non-hazardous industrial waste generated by the manufacturing industries (ISIC/NACE 15-37) and on the various treatment and disposal methods implemented in Member countries. The table refers to all non-hazardous waste generated including waste for recovery and recycling, but excluding amounts undergoing internal recycling, i.e. directly at the place of generation. Total amount generated is requested along with the amount sent to recovery (recycling, composting, incineration with energy recovery), disposal operations (incineration without energy recovery) and final disposal (landfilled and controlled landfill). TABLES 4A/B HAZARDOUS WASTE These tables collect data on the amounts of hazardous waste generated and on the various treatment and disposal methods implemented. They are closely co-ordinated with related work done by the Secretariat of the Basel Convention on the Control of Transboundary movements of hazardous wastes and their disposal. Total amount generated, total imported/exported. Amount destined for recovery (incineration with energy recovery, recycling & composting, other recovery and disposal operations (physiochemical, biological, incineration without energy recovery, landfill and other deposit methods, release into water bodies, permanent storage and preparatory activities in country). Table 4B records hazardous waste generated by waste categories (Y codes 1-18).
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	<p>■ TABLES 5A/B/C MUNICIPAL WASTE</p> <p>5a – Generation and collection of municipal waste By origin (from households, commerce and trade, municipal services), by type of waste (household and similar, bulky) and by type of collection (traditional, bulky, separate collection of fractions).</p> <p>5b – Composition of municipal waste Total amount collected, broken down by paper, textiles, plastic, glass, metals, organic material, bulky waste, other waste. Reported in total tonnes and %. Also broken down into the amount from separate collection.</p> <p>5c - Treatment and disposal of municipal waste Total amounts designated for treatment and disposal, then broken down by recovery operations (recycling, composting, incineration with energy recovery inc residues from other operations), disposal operations; amounts going to final treatment(incineration without energy recovery inc residues from other operations), amounts going to final disposal (landfill inc residues from other operations).</p> <p>■ TABLE 6 WASTE TREATMENT AND DISPOSAL INSTALLATIONS</p> <p>For landfill sites, and controlled landfills (the number, total area, remaining capacity, annual input) and Incineration plants (the number and capacity) including the number and capacity of those with energy recovery and energy produced in Toe. Also the number and capacity of treatment plants, permanent storage and other facilities are required. Capacity in tonnes.</p> <p>Environment Database Waste (held on line at OECD.Stat, the OECD Statistics Database) also referred to as the SIREN database.</p> <p>The online statistics database (OECD.StatExtracts) contains the waste data listed in tables 1A to 6 above along with a live database on the following tonnage information;</p> <ul style="list-style-type: none"> ■ Municipal waste – divided into household waste and other waste ■ Total treatment – divided into amount designated for recovery operations (sub categories of recycling, composting, incineration with energy recovery, other recovery and amount destined for disposal operations (sub categories of incineration without energy recovery, landfill, other disposal). <p>This information is collected using the Annual Quality Assurance Questionnaire (AQA) that gathers information on the Key Environmental Indicators. Definitions for all terms are provided which are consistent with those from the SoW questionnaire.</p>
Dependent datasets	The data uses SiC (standard industry classification) codes to determine the source of wastes.
Relevant definitions and classifications used	<p>The OECD Factbook defines municipal waste as “ waste collected and treated by or for municipalities. It covers waste from households, including bulky waste, similar waste from commercial and trade, office buildings, institutions and small businesses, yard and garden waste, street sweepings, the contents of litter containers and market cleansing waste. The definition excludes waste from municipal sewage networks and construction and demolition activities”.</p> <p>The OECD Data Compendium on Waste covers “materials falling under waste regulations, i.e. materials that are not prime productsWaste may be generated during the extraction of raw materials, during the processing of raw materials to intermediate and final products, during the consumption of final products and during other human activity”. The definitions used are described as being those that exist at an international level.</p> <p>The State of the Environment Questionnaire Definitions are as follows:</p> <p>WASTE</p> <p>Waste refer here to materials that are not prime products (i.e. products produced for the market) for which the generator has no further use for own purpose of production, transformation or consumption, and which he discards, or intends or is required to discard.</p> <p>Wastes may be generated during the extraction of raw materials during the processing of raw materials to intermediate and final products, during the consumption of final products,</p>

	<p>and during any other human activity.</p> <p>Are excluded:</p> <p>Residuals directly recycled or reused at the place of generation (i.e. establishment);</p> <p>Waste materials that are directly discharged into ambient water or air.</p> <p>BIODEGRADABLE WASTE</p> <p>Any waste that is capable of undergoing anaerobic or aerobic decomposition. Examples are food waste or garden waste.</p> <p>BULKY WASTE</p> <p>Waste that due to its bulky character needs special considerations for its management. Examples are white goods, old furniture, mattresses, etc., if managed as waste. Excludes construction and demolition waste.</p> <p>COMPOSTING</p> <p>Biological process that submits biodegradable waste to anaerobic or aerobic decomposition, and that results in a product that is recovered.</p> <p>CONSTRUCTION AND DEMOLITION WASTE</p> <p>Construction and demolition waste: rubble and other waste material arising from the construction, demolition, renovation or reconstruction of buildings or parts thereof, whether on the surface or underground. Consists mainly of building material and soil.</p> <p>Construction and demolition waste: rubble and other waste material arising from the construction, demolition, renovation or reconstruction of buildings or parts thereof, whether on the surface or underground.</p> <p>Consists mainly of building material and soil, including excavated soil. Includes waste from all origins and from all economic activity sectors.</p> <p>CONTROLLED LANDFILL</p> <p>Landfill whose operation is submitted to a permit system and to technical control procedures in compliance with the national legislation in force. Includes specially engineered landfill.</p> <p>DISPOSAL</p> <p>Disposal is defined as any waste management operation serving or carrying out the final treatment and disposal of waste. It covers the following main operations:</p> <p>Final treatment:</p> <ul style="list-style-type: none"> ■ Incineration without energy recovery (on land; at sea) ■ Biological, physical, chemical treatment resulting in products or residues that are discarded, i.e. going to final disposal. <p>Final disposal:</p> <ul style="list-style-type: none"> ■ Deposit into or onto land (e.g. landfill), including specially engineered landfill ■ Deep injection ■ Surface impoundment ■ Release into water bodies ■ Permanent storage. <p>FINAL TREATMENT</p> <p>The physical, thermal, chemical or biological processes, that change the characteristics of the waste in order to reduce its volume or hazardous nature, and that results in a product that goes to final disposal.</p> <p>HAZARDOUS WASTE</p> <p>Hazardous waste refers to the categories of waste to be controlled according to the Basel Convention on the control of transboundary movements of hazardous waste and their disposal (Article 1 and Annex I).</p> <p>HOUSEHOLD AND SIMILAR WASTE</p> <p>Waste from households as well as other waste, which, because of its nature or composition, is similar to waste from households.</p> <p>LANDFILL</p> <p>Landfill is defined as deposit of waste into or onto land, including specially engineered</p>
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	<p>landfill, and temporary storage of over one year on permanent sites.</p> <p>The definition covers both landfill in internal sites (i.e. where a generator of waste is carrying out its own waste disposal at the place of generation) and in external sites.</p> <p>MECHANICAL SORTING</p> <p>Preparatory operation (or treatment) applied to collected mixed waste in order to separate those fractions that may be recovered and to minimise the amounts going to final disposal.</p> <p>MUNICIPAL WASTE</p> <p>Municipal waste includes household waste and similar waste.</p> <p>The definition also includes:</p> <ul style="list-style-type: none"> ■ bulky waste (e.g. white goods, old furniture, mattresses); and ■ yard waste, leaves, grass clippings, street sweepings, the content of litter containers, and market cleansing waste, if managed as waste. <p>It includes waste originating from:</p> <ul style="list-style-type: none"> ■ households ■ commerce and trade, small businesses, office buildings and institutions (schools, hospitals, government buildings). <p>It also includes:</p> <ul style="list-style-type: none"> ■ waste from selected municipal services, i.e. waste from park and garden maintenance, waste from street cleaning services (street sweepings, the content of litter containers, market cleansing waste) <p>if managed as waste.</p> <p>It includes waste from these sources collected:</p> <ul style="list-style-type: none"> ■ door-to-door through traditional collection (mixed household waste), and ■ fractions collected separately for recovery operations (through door-to-door collection and/or through voluntary deposits). <p>For the purpose of this questionnaire, municipal waste refers to waste defined as above, collected by or on behalf of municipalities.</p> <p>The definition also includes waste from the same sources and similar in nature and composition which:</p> <ul style="list-style-type: none"> ■ are collected directly by the private sector (business or private non-profit institutions) not on behalf of municipalities (mainly separate collection for recovery purposes), ■ originate from rural areas not served by a regular waste service, even if they are disposed by the generator. <p>Household like waste generated by sectors not covered by the definition of municipal waste should be reported under the respective sectors of Table 1.</p> <p>The definition excludes:</p> <ul style="list-style-type: none"> ■ waste from municipal sewage network and treatment ■ municipal construction and demolition waste. <p>PREPARATORY OPERATIONS (OR ACTIVITIES)</p> <p>Includes preparatory activities prior to any recovery or disposal operation, such as blending, mixing, repackaging, temporary storage, etc. that change the characteristics of the waste in order to reduce its volume or hazardous nature, facilitate its handling or enhance recovery.</p> <p>POPULATION SERVED BY MUNICIPAL WASTE SERVICES</p> <p>The percentage of addresses within a municipality where household waste is collected regularly by or on behalf of the municipal authorities.</p> <p>PRIMARY WASTE</p> <p>Waste from primary sources, i.e. waste generated during the extraction of raw materials during the processing of raw materials to intermediate and final products, during the consumption of final products, and during a cleaning operation.</p> <p>RECOVERY</p> <p>Recovery is defined as any waste management operation that diverts a waste material</p>
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	<p>from the waste stream and which results in a certain product with a potential economic or ecological benefit. Recovery mainly refers to the following operations:</p> <ul style="list-style-type: none"> ■ material recovery, i.e. recycling (see below) ■ energy recovery, i.e. re-use a fuel ■ biological recovery, e.g. composting ■ re-use. <p>Direct recycling or reuse within industrial plants at the place of generation is excluded.</p> <p>RECYCLING</p> <p>Recycling is defined as any reprocessing of material in a production process that diverts it from the waste stream, except reuse as fuel. Both reprocessing as the same type of product, and for different purposes should be included.</p> <p>Direct recycling within industrial plants at the place of generation should be excluded.</p> <p>REFILLABLE BOTTLES</p> <p>Packaging, which has been conceived and designed to accomplish within its life cycle a minimum number of trips or rotations, is refilled or used for the same purpose for which it was conceived,</p> <p>with or without the support of auxiliary products present on the market enabling the packaging to be refilled; such reused packaging will become packaging waste when no longer subject to reuse.</p> <p>For the purpose of this questionnaire, information on refillable bottles refers to the amount (weight in tonnes) of refillable bottles 'in circulation'.</p> <p>When refillable bottles turn into waste (at the end of their life cycle) they should be counted as 'normal' packaging waste.</p> <p>RE-USE</p> <p>Re-use shall mean any operation by which end of life products and equipment (e.g. electrical and electronic equipment) or its components are used for the same purpose for which they were conceived.</p> <p>Direct reuse at the place of generation (i.e. establishment) is excluded.</p> <p>SECONDARY WASTE (OR TREATMENT RESIDUES)</p> <p>Waste from secondary sources, i.e. waste generated in a process that is known as a waste treatment operation. Includes residual materials originating from recovery and disposal operations, such as incineration and composting residues.</p> <p>N.B. In accordance with the definition of waste (page 9), waste from sewage treatment (i.e. sewage sludge) is considered as primary waste.</p> <p>SEWAGE SLUDGE</p> <p>Sludge from wastewater treatment. This includes sludge generated by municipal wastewater treatment plants as well as by private treatment plants, e.g. within the manufacturing industries.</p> <p>SPECIALLY ENGINEERED LANDFILL</p> <p>Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment).</p> <p>TRANSBOUNDARY MOVEMENT</p> <p>Transboundary movement means any movement of waste from an area under the national jurisdiction of one State to or through an area under the national jurisdiction of another State, or</p> <p>to or through an area not under the national jurisdiction of any State, provided at least two States are involved in the movement.</p> <p>TREATMENT</p> <p>Treatment means the physical, thermal, chemical or biological processes that change the characteristics of the waste in order to reduce its volume or hazardous nature facilitate its handling or enhance recovery.</p> <p>WASTE MANAGEMENT</p> <p>Waste management means the collection, transport, treatment and disposal of waste, including after-care of disposal sites.</p>
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	<p>Selected Waste Streams included in the SoE questionnaire include</p> <p>Construction and demolition wastes: rubble and other waste material arising from the construction, demolition, renovation or reconstruction of buildings or parts thereof, whether on the surface or underground. Consists mainly of building material and soil. Includes waste from all origins and all economic sectors.</p> <p>Sewage sludge includes sludge from municipal and private waste water treatment plants. Data reported here should be clearly</p> <p>Electric and electronic scrap - Discarded equipment such as refrigerators, washing machines, televisions, audio apparatus, computers, small electric and electronic household appliances.</p> <p>Other waste streams e.g. waste arising from air pollution control measures, medical waste, disposable baby nappies, batteries and accumulators, ceramics, organic waste, etc.</p> <p>The AQA Definitions are as follows</p> <p>MUNICIPAL WASTE</p> <p>Municipal waste includes household waste and similar waste.</p> <p>The definition also includes:</p> <ul style="list-style-type: none"> ■ bulky waste (e.g. white goods, old furniture, mattresses); and ■ yard waste, leaves, grass clippings, street sweepings, the content of litter containers, and market cleansing waste, <p>if managed as waste.</p> <p>It includes waste originating from:</p> <ul style="list-style-type: none"> ■ households, ■ commerce and trade, small businesses, office buildings and institutions (schools, hospitals, government buildings). <p>It also includes:</p> <ul style="list-style-type: none"> ■ waste from selected municipal services, i.e. waste from park and garden maintenance, waste from street cleaning services (street sweepings, the content of litter containers, market cleansing waste). <p>if managed as waste.</p> <p>It includes waste from these sources collected:</p> <ul style="list-style-type: none"> ■ door-to-door through traditional collection (mixed household waste), and ■ fractions collected separately for recovery operations (through door-to-door collection and/or through voluntary deposits). <p>For the purpose of this questionnaire, municipal waste refers to waste defined as above, collected by or on behalf of municipalities.</p> <p>The definition also includes waste from the same sources and similar in nature and composition which:</p> <ul style="list-style-type: none"> ■ are collected directly by the private sector (business or private non-profit institutions) not on behalf of municipalities (mainly separate collection for recovery purposes), ■ originate from rural areas not served by a regular waste service, even if they are disposed by the generator. <p>The definition excludes:</p> <ul style="list-style-type: none"> ■ waste from municipal sewage network and treatment, ■ municipal construction and demolition waste." <p>HOUSEHOLD AND SIMILAR WASTE</p> <p>Waste from households as well as other waste, which, because of its nature or composition, is similar to waste from households.</p> <p>TREATMENT</p> <p>Treatment means the physical, thermal, chemical or biological processes that change the characteristics of the waste in order to reduce its volume or hazardous nature facilitate its handling or enhance recovery.</p>
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	<p>RECOVERY</p> <p>Recovery is defined as any waste management operation that diverts a waste material from the waste stream and which results in a certain product with a potential economic or ecological benefit. Recovery mainly refers to the following operations:</p> <ul style="list-style-type: none"> ■ material recovery, i.e. recycling (see below); ■ energy recovery, i.e. re-use a fuel; ■ re-use. <p>Direct recycling or reuse within industrial plants at the place of generation is excluded.</p> <p>RECYCLING</p> <p>Recycling is defined as any reprocessing of material in a production process that diverts it from the waste stream, except reuse as fuel. Both reprocessing as the same type of product, and for different purposes should be included.</p> <p>Direct recycling within industrial plants at the place of generation should be excluded.</p> <p>COMPOSTING</p> <p>Biological process that submits biodegradable waste to anaerobic or aerobic decomposition, and that results in a product that is recovered.</p> <p>DISPOSAL</p> <p>Disposal is defined as any waste management operation serving or carrying out the final treatment and disposal of waste. It covers the following main operations:</p> <p>Final treatment:</p> <ul style="list-style-type: none"> ■ Incineration without energy recovery (on land; at sea) ■ Biological, physical, chemical treatment resulting in products or residues that are discarded, i.e. going to final disposal. <p>Final disposal:</p> <ul style="list-style-type: none"> ■ Deposit into or onto land (e.g. landfill), including specially engineered landfill ■ Deep injection ■ Surface impoundment ■ Release into water bodies ■ Permanent storage". <p>LANDFILL</p> <p>Landfill is defined as deposit of waste into or onto land, including specially engineered landfill, and temporary storage of over one year on permanent sites. The definition covers both landfill in internal sites (i.e. where a generator of waste is carrying out its own waste disposal at the place of generation) and in external sites.</p>
Unit(s)	Varies by publication, tonnes, kg, kg per capita, % recycled or composted.
Reporting frequency	<p>The State of the Environment questionnaire information is collected biannually; a questionnaire was last completed in 2010 which requested data for the 2009 year.</p> <p>The State of the Environment Questionnaire is sent out approximately mid- year for completion by the end of the year. The deadline for the 2010 form was the 31st October 2010 and the 2012 deadline is understood to be end of 2012.</p> <p>The Annual Quality Assurance questionnaire is sent out every year and requests information for the previous year. Data is reported on an annual basis (calendar year). The deadline for the 2011 form was 4th November 2011 and the deadline for 2012 is understood to be the end of 2012.</p> <p>The most recently reported data by OECD relates to 2009 so there is therefore a time lag between collection and reporting. The date for submission of these forms is also not the same each year.</p> <p>Additional requests for data will be on an ad hoc basis with deadlines determined by the OECD as appropriate.</p>
Date last reported	Latest information published on the OECD statistical website is for 2009. However information requests are understood to have been made in 2012. The latest State of the

	Environment Questionnaire was submitted in 2010 and AQA submitted in 2011.
Reported by and contact details	Requests for waste information are made to the Environment Research and Information Branch at DSEWPaC and the Australian Bureau of Statistics.
Data sources used OECD website, OECD example data requests provided by DSEWPaC	
Data gaps/issues <p>The requests for information from OECD relate to key waste indicators which are replicated in a variety of different documents and publications. The most commonly used indicators would appear to be municipal waste generation. The OECD datasets contain definitions, however the OECD themselves point out that these may not match with national definitions.</p> <p>From a review of the reported data on the OECD website there are currently gaps in the information for Australia. In particular the Data Compendium publication contains data tables from 1-6, not all of which had been fully completed for Australia and the data shown does not always match the year submitted, e.g. data for 2000 is shown when 2005 is required, also financial year data is shown when calendar is required.</p> <p>Information gaps exist for tables showing waste generation tonnage by waste sector, waste stream, composition of municipal waste, disposal routes, proportion of MSW composted, proportion of MSW sent to incineration. Also hazardous waste sent to treatment other than incineration, e.g. landfill, waste recycling rates for specific materials, treatment and disposal facility information; no. of facilities, capacity, throughput information. There is no information on spent nuclear fuel arisings.</p> <p>The data uses SiC (standard industry classification) codes to determine the source of wastes. Therefore mapping of waste data against SiC data for that wastes arising source is required.</p> <p>Hazardous waste generation information is according to Basel convention definitions and there is therefore scope for overlap of reporting. Other waste reporting requires specific data to be collected that is not currently gathered for other Convention reporting.</p>	
Summary of significance The OECD reporting requirements relate to a set of key waste indicators gathered using the State of the Environment Questionnaire and the Annual Quality Assurance Questionnaire. These questionnaires are completed on a regular cycle (every 2 years and every 1 year respectively although the date for submission seems to change between years. The OECD uses the data for a number of publications and there is often a need to data to be checked or updated by Australia on an ad hoc basis to tie in with the updating cycle for the various environmental publications set out above. <p>There is some overlap with Basel reporting requirements but there is additional data required on waste generation activity by sector and recovery and recycling of various waste streams and treatment and disposal activity. Australia does not currently provide data against all of the categories in the SoE questionnaire and the AQA questionnaire.</p>	

Treaty/Framework Name	United Nations Framework Convention on Climate Change Kyoto Protocol to the United Nations Framework Convention on Climate Change
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	The Convention was signed on 9 th May 1992 Australia ratified the Convention on 30 th December 1992 and it came into force on 21 st March 1994 The Kyoto Protocol was signed on 11 th December 1997 Australia ratified the Protocol on 12 th December 2007 The Kyoto Protocol came into force for Australia on 11 th March 2008
Secretariat	UNFCCC secretariat Haus Carstanjen Martin-Luther-King-Strasse 8 53175 Bonn Germany
Related to	Stand alone protocol, but linked to the Montreal Protocol on substances which deplete the ozone layer.
Brief summary of purpose <p>The United Nations Framework Convention on Climate Change was passed at the Rio Earth summit in 1992 and aimed to limit emissions of greenhouse gases. The Kyoto Protocol was signed in 1997 and placed legal limits on greenhouse gas emissions by signatory countries, based upon percentage reduction compared to a base year of 1990. Although both the Convention and the Protocol have similar aims, the Convention had no legally binding targets. These were developed by signatory countries over time and signed as the Kyoto Protocol. The Protocol is the primary focus of this section.</p> <p>A range of greenhouse gases are covered, CO₂, methane, nitrous oxide, sulphur hexafluoride, HFCs, PFCs. Emissions are measured in terms of CO₂ equivalence.</p> <p>In order for Nations to reach their quantified emission limits, a range of potential policies and measures are outlined that they could implement in Article 2 of the Protocol. One of these is:</p> <ul style="list-style-type: none"> ■ <i>'Limitation and/or reduction of methane emissions through recovery and use in waste management'</i>, Waste sources are listed in Annex A to the Protocol as: ■ <i>'Solid waste disposal on land; wastewater handling; waste incineration; other'</i> <p>The protocol officially only covers up until 2012. There have been more limited agreements passed since then, primarily the Bali road map in 2007 and the Cancun agreements in 2010, but neither has been agreed to take Kyoto targets forward beyond 2012.</p> <p>At the Durban meeting in December 2011 it was decided that the Kyoto protocol would be extended beyond 2013 for either 5 or 8 years. In addition, it was agreed signatories would work on a replacement for the Protocol for agreement by 2015 with implementation from 2020. At the Durban meeting, there were no proposals to widen the waste-related scope of the Protocol (or its successors) beyond 2020.</p>	
Primary dataset(s) required	Emissions in tonnes from waste management operations, particularly of methane releases, split into sources as detailed above. The reported data may be estimates rather than direct measurements, but an approved methodology must be followed. The approved methodology is given in a handbook: http://unfccc.int/resource/docs/publications/08_unfccc_kp_ref_manual.pdf
Dependent datasets	Details of other emissions and also changes in emissions due to land use changes. All emissions reporting are related to a base year of 1990 and are cumulative, with each new year's data being added to previously reported data.
Relevant definitions and classifications used	Waste sources are listed in Annex A to the Protocol as: <i>'Solid waste disposal on land; wastewater handling; waste incineration; other'</i> Greenhouse gases are defined in Annex A : Carbon dioxide (CO ₂) Methane (CH ₄) Nitrous oxide (N ₂ O) Hydrofluorocarbons (HFCs) Perfluorocarbons (PFCs)

	<p>Sulphur hexafluoride (SF₆)</p> <p>Only methane of these gases is linked in the Protocol directly with waste management operations.</p>
Unit(s)	<p>All reporting is in terms of tonnes of CO₂ equivalents. However, published UNFCC reports use terms such as Gg (giga grams) or Mg (mega grams) ('000's tonnes and tonnes respectively) for emission levels.</p>
Reporting frequency	<p>Annual reporting is required, covering the period from the base year (1990) until 2 years prior to the date of submission.</p> <p>Reporting is by the 15th April, with any amendments made within 6 months.</p>
Date last reported	<p>The most recent publically available data is from 2009.</p> <p>There is a report detailing the most recent data submission from Australia as being 15th April 2011, covering the period 1990 – 2009.</p>
Reported by and contact details	<p>Focal points are given as:</p> <p>Assistant Secretary, International Division and First Assistant Secretary, Land Division Department of Climate Change and Energy Efficiency, GPO Box 854, Canberra</p>
<p>Data sources used</p> <p>UN framework Convention on climate change website at: http://unfccc.int/kyoto_protocol/items/2830.php</p>	
<p>Data gaps/issues</p> <p>Some reported data is based on estimated levels of emissions. In addition, all reporting is in terms of CO₂ equivalence, and requires data manipulation using agreed conversion factors. Changes in estimation or in the conversion factors may require extensive dataset reworking due to cumulative reporting.</p>	
<p>Summary of significance</p> <p>Article 12 of the UN Framework Convention sets out reporting requirements for national inventories. The Kyoto Protocol, which has been passed within the framework, has further reporting requirements. Reporting on uncertainty in data is required.</p> <p>Data is required on the emission of a range of greenhouse gases from specified sources, including methane emissions from landfill and waste incineration. All reporting is done using cumulative emission data since 1990, and requires the conversion of all emissions into tonnes of CO₂ equivalence.</p> <p>The Kyoto Protocol officially expires in 2012, although ongoing discussions are taking place to bring in a similar protocol going beyond this date. As yet, no clear targets have been proposed and the proposed date for the signing of any replacement protocol is not yet known.</p>	

Treaty/Framework Name	The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	The original Convention was signed on 10 th September 1998, and came into force on 24 th February 2004. Australia signed the Convention on 6 th July 1999 with it coming into force on 20 th May 2004.
Secretariat	Secretariat for the Rotterdam Convention United Nations Environment Programme (UNEP) 11-13 Chemin des Anémones CH-1219 Châtelaine GE Switzerland
Related to	Although similar to the Basel and Stockholm Conventions, it does not reference them. Waste is specifically excluded from the scope of the Convention.
<p>Brief summary of purpose</p> <p>The Convention covers the process of ensuring that prior to the import of specified chemicals and pesticides to signatory countries, information is supplied to the importing countries government to enable that any decision to import the chemicals is made based upon best available environmental and safety data. Although some of the listed chemicals are included within the Stockholm Convention, the majority are only included within the Rotterdam Convention. Obligations also apply to exports of banned or severely restricted chemicals even if not listed. To achieve its objectives the Convention includes two key provisions, namely the Prior Informed Consent (PIC) procedure and information exchange.</p> <p>The prior informed consent (PIC) procedure</p> <p>The PIC procedure is a mechanism for formally obtaining and disseminating the decisions of importing Parties as to whether they wish to receive future shipments of those chemicals listed in Annex III of the Convention and for ensuring compliance with these decisions by exporting parties.</p> <ul style="list-style-type: none"> For each of the chemicals listed in Annex III and subject to the PIC procedure a decision guidance document (DGD) is prepared and sent to all Parties. The DGD is intended to help governments assess the risks connected with the handling and use of the chemical and make more informed decisions about future import and use of the chemical, taking into account local conditions. All parties are required to take a decision as to whether or not they will allow future import of each of the chemicals in Annex III of the Convention. These decisions, known as import responses, are sent to the Secretariat by the designated national authority (DNA). A listing of the import responses given for each chemical subject to the PIC procedure is circulated by the Secretariat to all DNAs every six months via the PIC Circular. Import decisions taken by parties must be trade neutral, that is, if the party decides not to accept imports of a specific chemical, it must also stop domestic production of the chemical for domestic use and refuse imports from any source, including from non-parties. All exporting parties are required to ensure that exports of chemicals subject to the PIC procedure do not occur contrary to the decision of each importing party. They should ensure that import responses published in the PIC Circular are immediately communicated to their exporters, industry and any other relevant authorities, such as the Department of Customs. <p>Information exchange</p> <p>The Convention facilitates information exchange among parties for a very broad range of potentially hazardous chemicals.</p> <ul style="list-style-type: none"> The Convention requires each party to notify the Secretariat when taking a domestic regulatory action to ban or severely restrict a chemical. A developing country party or a party with an economy in transition that is experiencing problems caused by a severely hazardous pesticide formulation may report such problems to the Secretariat. All parties receive summaries of these notifications and proposals on a regular basis via the PIC Circular. When a chemical that is banned or severely restricted by a party is exported from its territory, that party must notify each individual importing party before the first shipment and annually thereafter. Exports of banned or severely restricted chemicals, as well as chemicals subject to the PIC procedure, are to be appropriately labelled and accompanied by basic health and safety information in the form of a safety data sheet. 	

Addition of Chemicals to Annex III

When the Secretariat has received at least one notification from each of two regions for a particular chemical that it has verified meet the requirements of Annex I, it forwards them to the Chemical Review Committee. The Committee reviews the notifications against the criteria stated in Annex II of the Convention. The review is required to:

- (a) *Confirm that the final regulatory action has been taken in order to protect human health or the environment;*
- (b) *Establish that the final regulatory action has been taken as a consequence of a risk evaluation. This evaluation shall be based on a review of scientific data in the context of the conditions prevailing in the Party in question. For this purpose, the documentation provided shall demonstrate that:*
 - (i) *Data have been generated according to scientifically recognized methods;*
 - (ii) *Data reviews have been performed and documented according to generally recognized scientific principles and procedures;*
 - (iii) *The final regulatory action was based on a risk evaluation involving prevailing conditions within the Party taking the action.*
- (c) *Consider whether the final regulatory action provides a sufficiently broad basis to merit listing of the chemical in Annex III, by taking into account:*
 - (i) *Whether the final regulatory action led, or would be expected to lead, to a significant decrease in the quantity of the chemical used or the number of its uses;*
 - (ii) *Whether the final regulatory action led to an actual reduction of risk or would be expected to result in a significant reduction of risk for human health or the environment of the Party that submitted the notification;*
 - (iii) *Whether the considerations that led to the final regulatory action being taken are applicable only in a limited geographical area or in other limited circumstances;*
 - (iv) *Whether there is evidence of ongoing international trade in the chemical;*
- (d) *Take into account that intentional misuse is not in itself an adequate reason to list a chemical in Annex III.*

Primary dataset(s) required	Exclusion of wastes from the Convention scopes means no reporting.
Dependent datasets	Exclusion of wastes from the Convention scopes means no reporting.
Relevant definitions and classifications used	N / A
Unit(s)	N / A
Reporting frequency	N / A
Date last reported	N / A
Reported by and contact details	N / A
Data sources used Rotterdam Convention website at: http://www.pic.int/	
Data gaps/issues There is a limited overlap with the Stockholm Convention, with both including the chemicals: aldrin; chlordane; DDT; dieldrin; endosulfan; hexabromobiphenyl; heptachlor; hexachlorobenzene; HCH; lindane; toxaphene; PCB's.	
Summary of significance This Convention does not apply to waste substances, so does not require reporting.	

Treaty/Framework Name	The Waigani Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	The Convention was signed in September 1995, and came into force in October 2001. Australia signed the Convention in September 1995, and it came into force in October 2001.
Secretariat	Secretariat of the Pacific Regional Environment Programme PO Box 240, Apia, Samoa
Related to	It is viewed by the Basel Convention secretariat as a multilateral regional agreement. The Basel Convention has a similar purpose but applies worldwide rather than on a limited geographical basis. Waigani also includes radioactive wastes and materials within its scope.
Brief summary of purpose <p>The Waigani Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Trans-boundary Movement and Management of Hazardous Wastes within the South Pacific Region (the Waigani Convention) is similar to the Basel Convention, with the exception that the Waigani Convention does include radioactive wastes, and applies only to the Pacific Islands region. The Region's obligations under the Waigani Convention are similar to that under the Basel Convention. There are currently thirteen Pacific Region countries who are signatories to the Waigani Convention. As a Party to the Waigani Convention, these countries are obliged to (among other things):</p> <ul style="list-style-type: none"> ■ Ban the importation of hazardous and radioactive wastes from outside the convention area; Prohibit shipment to and from non-Parties, unless there is a special agreement ■ Take measures to reduce the generation of hazardous wastes at source taking into account social, technological, and economic needs ■ As far as possible, develop adequate treatment and disposal facilities for hazardous wastes ■ Follow established procedures for the trans-boundary movement of hazardous waste to other Parties for environmentally sound disposal. <p>. Its coverage is defined as: <i>"Convention Area" shall comprise:</i> <i>(i) the land territory, internal waters, territorial sea, continental shelf, archipelagic waters and exclusive economic zones established in accordance with international law of:</i> <i>American Samoa; Australia; Cook Islands; Federated States of Micronesia; Fiji; French Polynesia; Guam; Kiribati; Republic of Marshall Islands; Nauru; New Caledonia and Dependencies; New Zealand; Niue; The Commonwealth of Northern Mariana Islands; Republic of Palau; Papua New Guinea; Pitcairn; Solomon Islands; Tokelau; Tonga; Tuvalu; Vanuatu; Wallis and Futuna; Western Samoa;</i> <i>(ii) those areas of high seas which are enclosed from all sides by the exclusive economic zones referred to in sub-paragraph (i);</i> <i>(iii) areas of the Pacific Ocean which have been included in the Convention Area pursuant to Article 2.6.</i> While it banned exports to Forum Island Countries, exports from these countries to Australia or New Zealand are permitted. The radioactive wastes covered are those already controlled by the International Atomic Energy Agency (IAEA). They are controlled within the Convention only as far as national level legislation being required to prevent their import to, or export from Forum Island Countries, unless the export is in line with IAEA regulations. The Convention describes various forms of information that should be transmitted between countries and to the Secretariat. These include: export notifications; written consent or disapproval for import applications; movement documentation; accident notification; and information on the sound management of wastes.</p>	
Primary dataset(s) required	Data on the import and export of wastes involving other Forum Island Countries is required, including waste types, volumes and fate.
Unit(s)	No units are stated within the Convention, however, reports from meetings of the

	Convention state metric tonnes must be used.
Reporting frequency	<p>Similar annual reporting to the Basel Convention, with reporting submitted at the end of each year for the previous calendar year.</p> <p>Additional ad-hoc reporting requirement, for the reporting of any illegal hazardous or radioactive waste activities within their jurisdiction to the secretariat.</p>
Dependent datasets	Data will be similar to Basel Convention data reporting.
Relevant definitions and classifications used	<p>The convention defines hazardous wastes, other wastes (Y46 and Y47) and radioactive waste.</p> <p>The relevant definitions from the Convention are:</p> <p><i>“Hazardous wastes” means wastes as specified in Article 2 of this Convention;</i></p> <p>Article 2 states:</p> <p><i>The following substances shall be “hazardous wastes” for the purposes of this Convention:</i></p> <p><i>(a) Wastes that belong to any category contained in Annex I of this Convention, unless they do not possess any of the characteristics contained in Annex II of this Convention; and</i></p> <p><i>(b) Wastes that are not covered under sub-paragraph (a) above, but which are defined as, or are considered to be, hazardous wastes by the national legislation of the exporting, importing or transit Party to, from or through which such wastes are to be sent.</i></p> <p><i>“Transboundary movement” means any movement of hazardous wastes from an area under the jurisdiction of any Party, to or through an area under the jurisdiction of another Party, or to or through an area not under the jurisdiction of another Party, provided at least two Parties are involved in the movement;</i></p> <p>Annex I of the Convention includes the Y codes from the Basel Convention, while Annex II lists hazardous properties (which are Annex III of the Basel Convention).</p> <p>Overall, this means that hazardous waste is defined in a similar manner to the Basel Convention.</p>
Date last reported	Not clear – there is a report dated August 2010 in the minutes of the 5 th meeting of the Convention, however the Secretariat's website does not include readily available data on other reports or give previous data. Reporting for 2011–12 was submitted in September 2012.
Reported by and contact details	<p>The 2010 data in the 5th Meeting report details the report as being completed by:</p> <p>Assistant Director, Hazardous Waste Section Department of the Environment, Water, Heritage and the Arts, GPO Box 787, Canberra Australian Capital Territory, Australia 2601</p>
Data sources used	
Secretariat of the Pacific regional environmental programme website at: http://www.sprep.org/	
Data gaps/issues	
There is little public, easily available reporting data specific to the Waigani Convention available online. The Secretariat website also has limited information available on this subject.	
Summary of significance	
<p>The Waigani Convention is similar to the Basel Convention, but it applies only to the limited geographical area of the Pacific Forum countries.</p> <p>Although the scope is similar to the Basel Convention, it also includes a ban on the import of radioactive waste materials by signatories.</p> <p>The Waigani convention is relevant to Australia in that it allows Australia to receive imports of hazardous waste from Forum Island Countries. Imports from Forum Island Countries will be captured in any Basel reporting carried</p>	



out by Australia via the annual Transmission of Information forms. For example in 2009, Australia reported the import of 250,000 tonnes of used lead acid batteries from Kirribati.

Treaty/Framework Name	The United Nations (UN) Commission on Sustainable Development and the UN Earth Summit including Agenda 21
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	The United Nations (UN) Commission on Sustainable Development was founded in December 1992, following the 1992 Earth Summit. Agenda 21, itself was agreed at the Earth Summit in Rio in June 1992. A number of subsequent summits have reaffirmed UN members commitment to Agenda 21.
Secretariat	United Nations Division for Sustainable Development Department of Economic and Social Affairs Two United Nations Plaza, Room DC2-2220 New York, NY 10017, USA
Related to	Chapter 19 of Section II relates to the Rotterdam Convention. Chapter 20 of section II requires nations to become signatories of the Basel Convention.
<p>Brief summary of purpose</p> <p>Agenda 21 is an international framework agreement for pursuing global sustainable development that was endorsed by national governments, including the Australian Government, at the 1992 Rio Earth Summit. Australia's commitment to Agenda 21 is reflected in a strong national response to meet our obligations under this international agreement.</p> <p>The format of Agenda 21 is a series of chapters each covering a specific topic. Within each topic a number of program areas are designated with action plans for their basis for inclusion; objectives; implementation through means of legislative requirements, technological requirements, and finances. Reporting requirements, where appropriate are also given.</p> <p><i>Chapter 20 of Section II of Agenda 21 covers the 'Environmentally Sound Management of Hazardous Wastes, Including Prevention of Illegal International Traffic in Hazardous Wastes'.</i></p> <p><i>'The following programme areas are included in this chapter:</i></p> <ul style="list-style-type: none"> <i>a) Promoting the prevention and minimization of hazardous waste;</i> <i>b) Promoting and strengthening institutional capacities in hazardous waste management;</i> <i>c) Promoting and strengthening international cooperation in the management of transboundary movements of hazardous wastes;</i> <i>d) Preventing illegal international traffic in hazardous wastes'.</i> <p>All four sections have requirements, including some reporting requirements.</p> <p>Area A is focussed on clean technology and the avoidance of hazardous waste production.</p> <p>Area B looks at information on hazardous waste management, both in terms of best practices for the treatment and handling of such wastes, but also in dissemination of information on associated health and environmental impacts.</p> <p>Area C focuses on the precautionary management of international traffic in hazardous waste and under implementation and reporting requires nations to join the Basel Convention.</p> <p>Area D is based around preventing illegal waste traffic and directly references the Basel Convention for implementation.</p> <p><i>Chapter 21 of Section II of Agenda 21 covers 'Environmentally Sound Management of Solid Wastes & Sewage-Related Issues'.</i></p> <p><i>'...focused on the four major waste-related programme areas, as follows:</i></p> <ul style="list-style-type: none"> <i>(a) Minimizing wastes;</i> <i>(b) Maximizing environmentally sound waste reuse and recycling;</i> <i>(c) Promoting environmentally sound waste disposal and treatment;</i> <i>(d) Extending waste service coverage'.</i> <p>Area A is looking at how material production can be improved to minimise waste production.</p> <p>Area B looks at resource efficiency, including better disposal sites and public information campaigns around the use of recycled products.</p>	
Primary dataset(s)	For Chapter 20 of Section II of Agenda 21, only Areas A and B have reporting

required	<p>requirements. These relate to information on national legislation and cleaner production methods for dissemination via the OECD and UN for Area A.</p> <p>For Area B, health impacts from wastes should be examined and risk assessments of various hazardous wastes prepare and that knowledge disseminated. There are no UN reporting requirements.</p> <p>For Chapter 21 of Section II of Agenda 21, Areas A and D have specific reporting requirements.</p> <p>Area A states:</p> <p><i>'Monitoring is a key prerequisite for keeping track of changes in waste quantity and quality and their resultant impact on health and the environment. Governments, with the support of international agencies, should:</i></p> <p><i>(a) Develop and apply methodologies for country-level waste monitoring;</i></p> <p><i>(b) Undertake data gathering and analysis, establish national goals and monitor progress;</i></p> <p><i>(c) Utilize data to assess environmental soundness of national waste policies as a basis for corrective action;</i></p> <p><i>(d) Input information into global information systems'.</i></p> <p>Area D states:</p> <p><i>'Governments, in collaboration with the United Nations and international organizations, should undertake the following:</i></p> <p><i>(a) Developing and applying methodologies for waste monitoring;</i></p> <p><i>(b) Data gathering and analysis to establish goals and monitor progress;</i></p> <p><i>(c) Inputting information into a global information system building upon existing systems;</i></p> <p><i>(d) Strengthening the activities of existing information networks in order to disseminate focused information on the application of innovative and low-cost alternatives for waste disposal to targeted audiences'.</i></p> <p>The requirements to report data are bolded.</p>
Dependent datasets	Information on waste production, both in terms of volumes and source / type.
Relevant definitions and classifications used	<p>Terms are not defined within the original document, although Chapter 20 does reference the Basel Convention. It is assumed the definition of hazardous waste would be similar to this.</p> <p>In chapter 21 Solid wastes, includes <i>'all domestic refuse and non-hazardous wastes such as commercial and institutional wastes, street sweepings and construction debris. In some countries, the solid wastes management system also handles human wastes such as night-soil, ashes from incinerators, septic tank sludge and sludge from sewage treatment plants. If these wastes manifest hazardous characteristics they should be treated as hazardous wastes'.</i></p>
Unit(s)	N / A
Reporting frequency	<p>No formal reporting cycle is stated in the original document.</p> <p>The Commission on Sustainable development required annual reporting up until 2002. This was reviewed and in order to reduce the burden on countries they are now asked to provide national reports to reflect on progress made in the themes in each CSD cycle. CSD Cycle 18/19 (covering the period May 2010 to 2011) includes a focus on solid waste management, including hazardous and solid waste. National reports are to be provided on a voluntary basis that reflects development in the areas of interest. Alternatively case studies or good practice examples can be submitted. There is a guidance document on National Reporting for CSD18/19.</p> <p>Reporting on the following high level issues is requested:</p> <ul style="list-style-type: none"> ■ Concrete actions taken and specific progress made in implementation ■ Lessons learned ■ Recent trends and emerging issues ■ Major constraints and challenges. <p>Prevention and minimization and environmentally sound management of hazardous</p>

	<p>wastes:</p> <ul style="list-style-type: none"> ■ Policy measures for the prevention and minimization of hazardous wastes ■ Transfer of environmentally sound technologies and know-how on clean technologies and low-waste production ■ Initiatives to treat, recycle, reuse and dispose of wastes at the source of generation and regulatory mechanisms (Polluter-pays principle) ■ Procedures for environmental impact assessment, taking into account the cradle-to-grave approach ■ Recovery, reuse and recycling of hazardous wastes and their transformation into useful material ■ Phase-out of toxic, persistent and bio-accumulative waste ■ Environmentally sound waste disposal and treatment ■ Inventories of hazardous waste production, their treatment/disposal, and contaminated sites ■ Establishment of combined treatment/disposal facilities for hazardous wastes in small- and medium-sized industries ■ Dissemination of scientific and technical information dealing with various health and environmental aspects of hazardous wastes ■ Notification systems and registries of exposed populations ■ Preventing illegal international traffic in hazardous wastes. <p>Environmentally sound management of solid (non-hazardous) wastes and sewage, in the context of integrated planning and management of land resources:</p> <ul style="list-style-type: none"> ■ Policies aimed at waste prevention and minimization, reuse and recycling ■ Development of environmentally sound disposal facilities, including technology to convert waste into energy, such as, for example, through utilization of landfill methane ■ Financial mechanisms for waste management service development in deprived areas. <p>Radioactive wastes and their environmentally sound management (safe storage, transportation and disposal of radioactive waste).</p> <p>The report requests an assessment of current and future areas of priority work in relation to waste management.</p>
Date last reported	<p>Country information is available on the United Nations website, information for Australia is provided on general progress on sustainable development.</p> <p>A report for Australia on waste management is not listed on the UN website which suggests that it has not yet been submitted.</p> <p>A Report on Trends in Trends in Sustainable Development – Chemicals, Mining, Transport, Waste Management 2010-2011 was published by the United Nations in 2010.</p>
Reported by and contact details	<p>Australia submitted a country profile report to the CSD in 2002. A National Assessment report was also submitted. In 2005 Australia provided a report on the status of Australia's National Sustainable Development Strategy and a thematic profile on key Australian principles for climate change.</p> <p>A national sustainable development strategy is implemented in Australia by the National Strategy for Ecologically Sustainable Development (NSED).</p> <p>An annual State of the Environment report is published in Australia by the Australian Government.</p> <p>The Sustainable development contact is given as the Policy and Communications Division, Australian Government Department of Sustainability, Environment, Water, Population and Communities, Canberra ACT 2601</p>
Data sources used	<p>UN Agenda 21 website at: http://www.un.org/esa/dsd/agenda21/res_agenda21_01.shtml</p>
Data gaps/issues	<p>Although there are references to 'waste' the term is not defined. Agenda 21 refers to the importance of setting up</p>



reporting systems for waste management, establishing goals and monitoring progress.

Summary of significance

Australia has committed to sustainable development through the Agenda 21 international framework and has put in place national policy on sustainable development.

The CSD requests annual reports on progress against the identified activity cycles. Waste management was the specific topic of CSD18. National reporting is voluntary and primarily focuses on progress against policies and strategies relating to the topic area. Australia does not appear to have reported against the COP18/19 cycle. There are no specific waste data reporting requirements.

Treaty/Framework Name	Global Methane Initiative (formerly the Methane to Markets partnership)
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	The Initiative was founded on 1 st October 2010, including signature by Australia on that date. As it is a voluntary system there was no separate commencement date for the Initiative.
Secretariat	There is no single secretariat, and different sectors have different chairing bodies. The overall initiative steering group is chaired by the US EPA, with only an email address and telephone number quoted. The steering group members are listed with contact details at: http://www.globalmethane.org/partners/countryCommittee.aspx?sector=steer
Related to	The Kyoto Protocol.
Brief summary of purpose <p>The Global Methane Initiative (GMI) is an inter government public-private initiative that is designed to bring together countries, financial institutions, NGO's and private sector bodies with the aims of reducing methane emissions by capturing fugitive emissions and utilising them for power generation. A range of sources are targeted, including landfills and wastewater treatment processes. Over 40 Countries have signed up to the GMI including the EU, USA, Canada, Russia, China and Indonesia. Financial institutes which have joined include the Asian Development Bank and Inter-American Development Bank.</p> <p>The initiative aims to spread knowledge and help other nations capture and utilise the gas. However, there are no targets formally set, nor are there any formal reporting requirements.</p> <p>The Global Methane Initiative relies on members setting action plans and then actioning these plans, which may include works in third party countries.</p>	
Primary dataset(s) required	No formal reporting.
Unit(s)	Any reporting is in units of mega tonnes of methane.
Reporting frequency	No specific reporting requirements.
Dependent datasets	National greenhouse gas inventory for methane, particularly from landfill.
Relevant definitions and classifications used	No definitions quoted.
Date last reported	There is a country profile for Australia on methane from landfills dated April 2011 on the Global Methane Initiative website.
Reported by and contact details	The report is a synthesis of a range of data and includes details of a number of interested and involved bodies, such as the Waste Management Association of Australia, the Clean Energy Council, and the Australian Landfill Owners Association. The contact in Australia for landfill related issues under the GMI are: Rob Sturgiss A/g Assistant Secretary Australia Department of Climate Change and Energy Efficiency Strategies and Coordination Division GPO Box 854, Canberra, ACT, 2601
Data sources used <p>GMI website at: http://www.globalmethane.org/gmi/</p>	
Data gaps/issues <p>There are no formal reporting requirements under the GMI, although plans for the reduction in emissions are required along with periodic updates on their implementation.</p>	



Summary of significance

The Global Methane Initiative is a private – public sector partnership to reduce emissions of methane from a number of specified sources. As well as nation states, financial bodies, private companies and NGO's are all members and may work to deliver methane emission reductions in their home countries or in others through a variety of means.



Treaty/Framework Name	The Antarctic Treaty
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	<p>The original Antarctic Treaty was signed in 1959 by the 12 nations who were active on the continent during the International Geophysical year 1957-58.</p> <p>An environment protocol was signed in October 1991, coming into force in January 1998.</p> <p>Australia signed the original treaty in 1959 and the Environment Protocol in October 1991.</p> <p>Although the original treaty was signed in 1959, it came into force in June 1961.</p>
Secretariat	<p>Secretaría del Tratado Antártico Maipú 757 Piso 4 C1006ACI - Buenos Aires Argentina</p>
Related to	This is a standalone Treaty and Protocol.
<p>Brief summary of purpose</p> <p>The Antarctic Treaty was designed to control the uses Antarctica was put to. These are that Antarctica is only put to peaceful uses; freedom for scientific investigation with cooperation towards that end; and scientific observations and results from Antarctica shall be exchanged and made freely available.</p> <p>The Environment Protocol designates Antarctica as a 'natural reserve, devoted to peace and science' and a series of Annexes to the Protocol cover specific environmental issues. Annex III relates to waste management and waste disposal.</p> <p>Both the Treaty and Protocol apply to both governmental and private sector operations in Antarctica, including tourism.</p> <p>Annex III of the Protocol relates solely to waste management and disposal. From the date of its coming into force (1998), to the 'maximum extent practicable', wastes generated on Antarctica should be returned to the country whose activities give rise to that waste. Where possible, older wastes remaining in Antarctica, including at no longer used sites should also be removed. A list of specified wastes which must only be removed from Antarctica is given, including solid wastes such as batteries, fuels, heavy metal containing wastes, radioactive substances, most plastics and fuel drums. Some wastes such as sewage may be treated in Antarctica by means such as incineration, where the emissions are controlled as tightly as possible. No tipping on land or at sea of wastes is permissible. A number of substances such as PCB containing materials and pesticides are banned from use in Antarctica.</p> <p>All signatory parties are required to prepare a waste management plan, including information on waste reduction, storage and disposal for each fixed site, field site and ship. Information on work plans to remove historic waste and contamination is also required.</p> <p>Waste management plans are to be reviewed and updated annually.</p>	
Primary dataset(s) required	<p>Waste management plans are to be submitted to the Secretariat including information on their implementation and review. The Secretariat may then comment on the plans.</p> <p>Published reports appear to contain no waste tonnages related data.</p>
Unit(s)	No units specified.
Reporting frequency	<p>Annual reporting in two stages:</p> <ol style="list-style-type: none"> 1) Plan for the forthcoming year at fixed sites, field sites and ships 2) Report on the plans implementation and review of plan. <p>Phase 2 can only be prepared at the end of the 'season' in Antarctica and must be prior to October 1st. Each report covers the period 30th March to 1st April.</p>
Dependent datasets	There appears to be no direct waste reporting required.
Relevant definitions and classifications used	N / A
Date last reported	Last annual report available is for 2010/2011:



	http://eies.ats.aq/Ats.IE/ieGenRpt.aspx?idParty=2&period=2&idYear=2010
Reported by and contact details	The environment committee contact details for Australia are Australian Antarctic Division 203 Channel Highway Kingston, 7050 Australia
Data sources used	Secretariat of the Antarctic Treaty website: http://www.ats.aq/index_e.htm
Data gaps/issues	There appears to be no direct waste reporting required.
Summary of significance	<p>The Antarctic Treaty aims to preserve Antarctica for peaceful scientific research. Under the Environment Protocol to the Treaty there are restrictions on how wastes are handled and treated in Antarctica, with the majority of wastes being required to be removed to the country of origin. This includes historic contamination and wastes from earlier operations on the continent.</p> <p>Although annual reporting on activities is required, this does not include data on waste arisings or disposal routes.</p>

Treaty/Framework Name	Joint Convention On The Safety Of Spent Fuel Management And On The Safety Of Radioactive Waste Management
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	The Joint Convention was opened for signature on 29 th September 1997. The Convention came into force on 18 th June 2001. Australia signed the Convention in November 1998, with it coming into force on 3 rd November 2003.
Secretariat	International Atomic Energy Agency Vienna International Centre, PO Box 100 A-1400 Vienna, Austria
Related to	Standalone Convention. Most other Conventions or treaties exclude radioactive wastes.
Brief summary of purpose <p>The Joint Convention applies to spent fuel and radioactive wastes, resulting from civilian nuclear reactors and applications. It only applies to spent fuel and radioactive wastes from military or defence programmes, if and when such materials are transferred permanently to and managed within exclusively civilian programmes, or when declared as spent fuel or radioactive waste for the purpose of the Convention by the signatories (referred to as 'the Contracting Party' throughout the Convention). The Convention also applies to planned and controlled releases into the environment of liquid or gaseous radioactive materials from regulated nuclear facilities.</p> <p>The Convention calls for review meetings of Contracting Parties. Each Contracting Party is required to submit a national report to each review meeting that addresses measures taken to implement each of the obligations of the Convention.</p> <p>A range of reporting is required, on policy issues and definitions; facilities being decommissioned and the status of that decommissioning; a list of Convention waste facilities including their purpose and features; list of fuel management facilities within the Convention including their purpose and features; an inventory of radioactive wastes including details of mass, radionuclide and activity.</p>	
Primary dataset(s) required	An inventory of radioactive wastes including information on mass, radionuclide and specific activity. Information on where the materials identified within the inventory are located.
Unit(s)	Units depend on the reporting subject. Volumes of radionuclides are reported in terms of their total activity, given in MBq (mega Becquerel). Reporting on mining and milling wastes is given in tonnes or mega tonnes. Some data reported states it is estimated. Waste stored in the ANSTO (Australian Nuclear Science and Technology Organisation) waste facility is in cubic metres.
Reporting frequency	Reporting is made prior to each review meeting. No time period between meetings is set within the Convention, with meeting dates instead being set at the previous meeting, although all meeting so far have been at 3 year intervals. So far 3 meetings have been held (2003, 2006, 2009) with the fourth meeting to be held in May 2012.
Dependent datasets	Much of the information required will be to report on the location of facilities and their purpose. However, other data may be required from the outcomes of national level strategies of long term disposal sites or decommissioning of sites, including mining facilities.
Relevant definitions and classifications used	All definitions are standard chemical definitions.
Date last reported	The report submitted to the 2009 meeting is dated October 2008.
Reported by and	No details in the report.



contact details	
Data sources used	<p>The IAEA website on the joint Convention on the safety of spent fuel management and on the safety of radioactive waste management</p> <p>http://www-ns.iaea.org/conventions/waste-jointconvention.asp?s=6&l=40</p>
Data gaps/issues	<p>There is a wide range of information required on waste volumes and their nature. Due to radioactive decay, there may be a requirement to re-evaluate historic data each reporting period.</p> <p>All mining related wastes appear to be described in terms of source and volumes only, with no activities or radionuclides identified.</p> <p>Some data currently reported, particularly relating to mining wastes, states it is estimated volumes. This may need refining at a later date.</p> <p>A data gap appears to be in the most recent report – only data relating to mining wastes for the Northern Territories and South Australia is given. The map of mining sites also identifies mines (and potential mines) in Queensland and Western Australia (although prospective mines are identified in WA).</p>
Summary of significance	<p>The IAEA Convention relates solely to radioactive wastes, from both civilian and military application (but only once it has been transferred to civilian control) and includes both mining and operational wastes.</p> <p>Every three years a report is prepared detailing the way Australia is handling its wastes, including identifying the locations for the waste, the radionuclides present and activities, particularly for fuel cycle related wastes.</p> <p>Although mining wastes are reported, this is purely in terms of source, location and approximate volume.</p>

Treaty/Framework Name	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code)
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	<p>The Code is contained within Annex II of the MARPOL Convention (Marine Pollution Convention, signed in 1973 and modified in 1978).</p> <p>MARPOL came into force on 2nd October 1983, with Annex II of the Convention in force from this date. A revision to Annex II came into force on 1st January 2007.</p>
Secretariat	<p>International Maritime Organisation 4, Albert Embankment London SE1 7SR United Kingdom Tel +44 (0)20 7735 7611 Email: info@imo.org</p>
Related to	Stand alone legislation.
Brief summary of purpose <p>The Code covers the minimum acceptable standards and levels of construction of ships designed to carry chemicals in bulk. It covers all tanks constructed after 1st July 1986. It details the discharge criteria and measures for the control of pollution by noxious liquid substances carried in bulk; some 250 substances were evaluated and included in the list appended to the Convention; the discharge of their residues is allowed only to reception facilities until certain concentrations and conditions (which vary with the category of substances) are complied with. In any case, no discharge of residues containing noxious substances is permitted within 12 miles of the nearest land.</p> <p>The 2007 revision lowered permissible levels of chemicals within wash waters and redefined chemical hazards.</p>	
Primary dataset(s) required	No reporting required, the Code relates to the construction standards of chemical tankers.
Unit(s)	No units quoted.
Reporting frequency	No reporting required.
Dependent datasets	None.
Relevant definitions and classifications used	Annex II contains over 250 chemicals and details of the construction standards needed for shipborne transport.
Date last reported	N / A
Reported by and contact details	N / A
Data sources used IMO Website http://www.imo.org/OurWork/Environment/PollutionPrevention/ChemicalPollution/Pages/IBCCode.aspx	
Data gaps/issues It is difficult to find a complete copy of the Annex easily available to review.	
Summary of significance The Code relates to construction standards for chemical tankers.	

Treaty/Framework Name	Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS Protocol).
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	The OPRC-HNS Protocol was adopted to expand the scope of the 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC 1990), which entered into force on 13 May 1995. The OPRC-HNS Protocol was adopted on the 15 th March 2000 and came into force on 14 th June 2007.
Secretariat	International Maritime Organisation (IMO) 4, Albert Embankment London SE1 7SR United Kingdom Tel +44 (0)20 7735 7611 Email: info@imo.org
Related to	Stand alone legislation.
Brief summary of purpose The IMO State: <i>The Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances (HNS), 2000 or the OPRC-HNS Protocol, aims to provide a global framework for international co-operation establishing systems for preparedness and response in combating incidents or threats of marine pollution involving HNS at the national, regional and global levels; in improving scientific and technological understanding and knowledge in this field; in promoting technical cooperation in response techniques; and in developing specialized training programmes.</i> <i>The OPRC-HNS Protocol was adopted to expand the scope of the 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC Convention 1990), which entered into force on 13 May 1995, to apply, in whole or in part, to pollution incidents by hazardous substances other than oil.</i> Although it does not apply specifically to waste, waste chemicals which are hazardous or noxious, and not oil, fall within its remit. Signatories are encouraged to work on a regional basis to address spillages and incidents.	
Primary dataset(s) required	The Protocol requires parties to put into place a national system for responding to HNS spillages, including a national contingency plan and a minimum level of response equipment and training. In addition, there should be a designated point of operational contact and national authority responsible for communications plans, regular training and exercises.
Unit(s)	No units.
Reporting frequency	No routine reporting formally required.
Dependent datasets	Data needed to demonstrate that the infrastructure is in place for responding to HNS incidents.
Relevant definitions and classifications used	HNS are defined as: <i>any substance other than oil which, if introduced into the marine environment, is likely to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.</i>
Date last reported	N / A
Reported by and contact details	N / A
Data sources used IMO Website and information contained therein.	
Data gaps/issues There are no direct reporting requirements under this Protocol.	



Summary of significance

The Protocol covers the response required to spillages of chemicals and other materials from shipping. Although it does not specifically cover wastes, many wastes undergoing transboundary shipment would fall within its scope.

Treaty/Framework Name	Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (the "London Convention") Updated to the "London Protocol"
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	Original Convention was opened for signature on 29 th December 1972. It came into force on August 30 th 1975. Australia signed on the 21 st August 1985, with the Convention coming into force on 20 th September 1985. A completely updated Convention, known as the London Protocol, was agreed in November 1996. This came into force on 24 th March 2006. Australia sign the Protocol on 4 th December 2000, and it came into force on 24 th March 2006.
Secretariat	International Maritime Organisation (IMO) 4, Albert Embankment London SE1 7SR United Kingdom Tel +44 (0)20 7735 7611 Email: info@imo.org
Related to	London Protocol developed in response to the United Nations Convention on the Law of the Sea, 1982, and the Rio Declaration on Environment and Development and Agenda 21.
<p>Brief summary of purpose</p> <p>The Convention aims to prevent the uncontrolled dumping of waste at sea as "<i>the capacity of the sea to assimilate wastes and render them harmless..... is not unlimited</i>".</p> <p>The sea includes all non-internal marine waters, including the seabed and ocean floor.</p> <p>The original London Convention has been updated by the London Protocol, to take into account The Rio Declaration and the UN Convention of the Law of the Sea. It aims to take into account approaches based on precaution and prevention. This has led to a change in meaning for some parts of the original Convention.</p> <p>The main change is that all dumping was banned under the original Convention. The Protocol, however, allows the dumping of named 'wastes or other matters', under the terms of a permit.</p> <p>Dumping is defined in the 1976 London Convention as being the:</p> <p><i>'deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea; and the deliberate disposal at seas of vessels, aircraft, platforms or other man-made structures at sea'.</i></p> <p>However, the definition excludes:</p> <p><i>'the disposal at sea of wastes or other matter incidental to, or derived from the normal operations of vessels, aircraft, platforms or other man-made structures at sea and their equipment, other than wastes or other matter transported by or to vessels, aircraft, platforms or other man-made structures at sea, operating for the purpose of disposal of such matter or derived from the treatment of such wastes or other matter on such vessels, aircraft, platforms or structures'; and</i></p> <p><i>'placement of matter for a purpose other than the mere disposal thereof provided that such placement is not contrary to the aims of this Convention'.</i></p> <p>The definition of dumping is however different in the 1996 London Protocol, where it has become:</p> <p>"Dumping" means:</p> <ul style="list-style-type: none"> ■ any deliberate disposal into the sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea; ■ any deliberate disposal into the sea of vessels, aircraft, platforms or other man-made structures at sea; ■ any storage of wastes or other matter in the seabed and the subsoil thereof from vessels, aircraft, platforms or other man-made structures at sea; and ■ any abandonment or toppling at site of platforms or other man-made structures at sea, for the sole purpose of deliberate disposal. <p>"Dumping" does not include:</p> <ul style="list-style-type: none"> ■ the disposal into the sea of wastes or other matter incidental to, or derived from the normal operations of 	

<p>vessels, aircraft, platforms or other man-made structures at sea and their equipment, other than wastes or other matter transported by or to vessels, aircraft, platforms or other man-made structures at sea, operating for the purpose of disposal of such matter or derived from the treatment of such wastes or other matter on such vessels, aircraft, platforms or other man-made structures;</p> <ul style="list-style-type: none"> ■ placement of matter for a purpose other than the mere disposal thereof, provided that such placement is not contrary to the aims of this Protocol; and ■ notwithstanding paragraph 4.1.4, abandonment in the sea of matter (e.g., cables, pipelines and marine research devices) placed for a purpose other than the mere disposal thereof. <p>Dumping of wastes or other matters, excluding those given in Annex 1 of the London Protocol is forbidden. Those included within Annex 1, require a permit to dump, issued in line with the requirements of Annex 2 of the Protocol. These requirements include an assessment of opportunities to avoid the dumping at sea (Article 4)</p> <p>The wastes and other matters included within Annex 1 are as below.</p> <p>The following wastes or other matter are those that may be considered for dumping being mindful of the Objectives and General Obligations of this Protocol set out in articles 2 and 3:</p> <ul style="list-style-type: none"> ■ dredged material; ■ sewage sludge; ■ fish waste, or material resulting from industrial fish processing operations; ■ vessels and platforms or other man-made structures at sea; ■ inert, inorganic geological material; ■ organic material of natural origin; ■ bulky items primarily comprising iron, steel, concrete and similarly un-harmful materials for which the concern is physical impact, and limited to those circumstances where such wastes are generated at locations, such as small islands with isolated communities, having no practicable access to disposal options other than dumping; and ■ Carbon dioxide streams from carbon dioxide capture processes for sequestration. (Bold text in original Protocol and specific requirements exist for carbon Dioxide, primarily around its deposit only within sub-seabed geological formations). <p>These materials may only be dumped where 'material capable of creating floating debris or otherwise contributing to pollution of the marine environment has been removed to the maximum extent'.</p> <p>The London Protocol places an absolute ban on the incineration of wastes or other matters at sea (Article 5).</p> <p>The export of wastes or other matters to other countries for their dumping or incineration at sea (Article 6).</p>	
Primary dataset(s) required	Article 9 of the Protocol requires parties to assign an appropriate authority to issue permits under the Protocol. These permits include details of the types and quantities of wastes and other matters, including details of the actual volumes deposited under the permit, the time, method and deposit location. Sea condition monitoring for the purposes of the protocol should also be carried out (potential in collaboration with other parties). Reporting on this information is required 'annually'.
Dependent datasets	Information on the administrative and legislative implementation of the protocol is required on a 'regular basis'.
Dependent datasets	Details of both agreed permits and permit returns detailing how much material was actually deposited.
Relevant definitions and classifications used	<p>The scope of the Convention and Protocol applies to 'Waste or other matter' means material and substances of any kind, form or description. The definition of 'sea' has altered on time as below.</p> <p>In the original 1972 text:</p> <p>'Sea' is defined as all marine waters other than the internal waters of States.</p> <p>The 1996 text states:</p> <p>'Sea' means all marine waters other than the internal waters of States, as well as the seabed and the subsoil thereof; it does not include sub-seabed repositories accessed only from land.</p> <p>Therefore, the Protocol is explicitly including deposits to the seabed.</p>
Unit(s)	Reported data is cubic metres. Where wet weights have been used, it is stated in the reporting that these have been converted to tonnes dry weight by multiplying by 1.3 x



	<p>volume.</p> <p>Template report uses tonnes dry weight, for everything except CO₂, which is tonnes with a percentage composition of CO₂.</p>
Reporting frequency	<p>Annual for permit and deposit details.</p> <p>Reporting by calendar year, by October of the following year.</p>
Date last reported	<p>The most recent published data on the IMO website refers to waste movements in 2007 (Published in May 2011).</p> <p>Reporting should be by October the following year.</p>
Reported by and contact details	<p>Not clear from IMO site.</p> <p>Permits are issued by the Department of Sustainability, Environment, Water, Population and Communities OR Great Barrier Reef Marine Park Authority (if the dumping is to take place within the Great Barrier Reef Marine Park).</p>
<p>Data sources used</p> <p>IMO Website: http://www.imo.org/OurWork/Environment/SpecialProgrammesAndInitiatives/Pages/London-Convention-and-Protocol.aspx</p>	
<p>Data gaps/issues</p> <p>Due to changes in definitions, data from pre-March 2006 is not comparable with later data.</p>	
<p>Summary of significance</p> <p>Covers the disposal of materials at sea, including some which are not classified as wastes ('other materials' in the Protocol). Where materials fit in a specified range of sources, these may be deposited provided that an appropriate permit is in place. The definition of seas includes areas outside territorial waters and the continental shelf of Australia.</p> <p>The scope of the Convention now includes geological deposit of CO₂.</p> <p>The original Convention has been heavily revised and is now referred to as the 'London Protocol'. As such historic data may not be compatible with current data.</p>	

Treaty/Framework Name	Bilateral agreement with East Timor on import of hazardous waste for disposal in Australia
Date of Treaty/Framework Date of Australia's signature Date of entry into force in Australia	Notified in the Commonwealth of Australia Gazette on 14 th April 2003, but original requests between the Governments involved are dated 31 st October 2002 (by the Australian Government) and 4 th November 2002 (by the Democratic Republic of East Timor Government).
Secretariat	Government of Australia.
Related to	Made under the terms of the Basel Convention.
Brief summary of purpose East Timor is not a signatory to the Basel Convention, therefore the importing of waste for disposal is not permitted under that Convention. The bilateral agreement has been put in place to allow such imports under the relevant domestic Australian legislation (the <i>Hazardous Waste (Regulation of Imports and exports) Act 1989</i>), as though East Timor were a signatory to the Convention. This bilateral agreement has been reported to the Basel Convention Secretariat and is reported under normal Basel reporting requirements.	
Primary dataset(s) required	Details of notified waste movements between the two states
Dependent datasets	Same as Basel
Relevant definitions and classifications used	Same as Basel
Unit(s)	Same as Basel
Reporting frequency	Same as Basel
Date last reported	Same as Basel
Reported by and contact details	Same as Basel
Data sources used Department of Sustainability, Environment, Water, Population and Communities website: http://www.environment.gov.au/settlements/chemicals/hazardous-waste/legislation.html	
Data gaps/issues None.	
Summary of significance Allows imports of hazardous waste from a non-Basel Convention signatory, the Democratic Republic of East Timor Government, into Australia for the purposes of disposal.	

Appendix C State and Territory Consultees

State/Territory	Name
ACT	Des Clayton Environment Protection and Water Regulation Environment and Sustainable Development Directorate
Queensland	Ahmed Rahman Waste Tracking Department of Environment and Heritage Protection
NSW	Jeevan Jacob Operations Officer, Hazardous materials Environmental Protection Authority
Western Australia	Cushla Barfoot Environmental Officer, Controlled Waste Tracking and Permitting Section, Department of Environment and Conservation
Northern Territory	Annie Andrews Environmental Officer Environment and Heritage Department of Natural Resources, Environment, the Arts and Sport
Tasmania	Marcus Newbown Waste Tracking Officer Waste Management Section EPA Division Department of Primary Industries, Parks, Water and Environment
South Australia	Steven Sergi Manager Waste to Resources Branch Environment Protection Authority