



Annual Report 2016–17

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Chair's foreword

It has been an honour to be the Chair of the National Environment Protection Council for the 2016–17 year.

The Council continues to play an important role in making sure that there are appropriate environmental measures in place to protect all Australians. National Environment Protection Measures are a means for achieving this. The measures cover air, site contamination, hazardous waste, pollutants and used packaging.

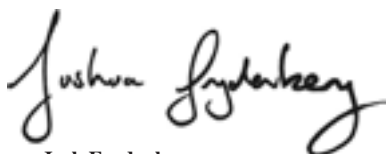
Australian governments have worked to implement strategies which have significantly improved Australia's air quality with positive environmental and health impacts. Amendments to strengthen national reporting standards for particle pollution came into effect in March 2016 and the states and territories have adopted and started reporting against these standards.

Further work is being carried out to review the reporting standards for ozone, nitrogen dioxide and sulfur dioxide. The project, which is being led by Victoria, will also consider new evidence on the health effects of air pollution.

In 2016–17, for the first time, the Australian Government published the National Pollutant Inventory dataset on the whole-of-government platform, www.data.gov.au. The National Pollutant Inventory provides emission estimates for 93 toxic substances and the source and location of these emissions.

Per- and poly-fluoroalkyl substances (PFAS) remained a focus for all states and territories. The release of these chemicals into the environment is an emerging concern globally. Australian governments (led by Victoria and the Commonwealth) are developing the PFAS National Environmental Management Plan to provide nationally consistent environmental guidance and standards for the investigation and management of PFAS contamination.

I thank all Council members and those who have supported the work of the Council in 2016–17. I look forward to continuing pursuit of consistent environmental standards for the benefit of all Australians.



Josh Frydenberg

Chair

National Environment Protection Council



Members of the National Environment Protection Council

From 1 July 2016 to 30 June 2017

Jurisdiction	Member	Duration of membership
Commonwealth	The Hon Josh Frydenberg MP Minister for the Environment and Energy	19 July 2016–30 June 2017
	The Hon Greg Hunt MP Minister for the Environment	18 September 2013–18 July 2016
New South Wales	The Hon Gabrielle Upton MP NSW Minister for the Environment	30 January 2017–30 June 2017
	The Hon Mark Speakman MP NSW Minister for the Environment	2 April 2015–30 January 2017
Victoria	The Hon Lily D'Ambrosio MP Minister for Energy, Environment and Climate Change	Full year
Queensland	The Hon Steven Miles MP Minister for Environment and Heritage Protection Minister for National Parks and the Great Barrier Reef	Full year
Western Australia	The Hon Stephen Dawson MLC Minister for Environment	17 March 2017–30 June 2017
	The Hon Albert Jacob MLA Minister for Environment; Heritage	21 March 2013–17 March 2017
South Australian	The Hon Ian Hunter MLC Minister for Sustainability, Environment and Conservation	Full year
Tasmania	The Hon Matthew Groom MP Minster for Environment, Parks, and Heritage	Full year
Australian Capital Territory	Mr Mick Gentleman MLA Minister for the Environment and Heritage	15 October 2016–30 June 2017
	Mr Simon Corbell MLA Minister for the Environment	7 November 2008–14 October 2016
Northern Territory	The Hon Lauren Moss MLA Minister for Environment and Natural Resources	12 September 2016–30 June 2017
	The Hon Michael Gunner Minister for the Environment	31 August 2016–11 September 2016
	The Hon Gary John Higgins MLA Minister for the Environment	12 December 2014–27 August 2016

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Overview

ABOUT THE NATIONAL ENVIRONMENT PROTECTION COUNCIL

In 1992, the Commonwealth and the states and territories entered into an Intergovernmental Agreement on the Environment, providing for the establishment of a body to determine national environment protection measures. This resulted in the creation of the *National Environment Protection Council Act 1994* (Cth) (the NEPC Act), which formally established the National Environment Protection Council as a body in 1995. Each state and territory has enacted mirror legislation. The Council consists of environment ministers from all jurisdictions, including the Commonwealth.

The objects of the NEPC Act are to ensure that, through the establishment and operation of the Council:

- people enjoy the benefit of equivalent protection from air, water or soil pollution and from noise, wherever they live in Australia
- decisions of the business community are not distorted, and markets are not fragmented, by variations between participating jurisdictions in relation to the adoption or implementation of major environment protection measures.

The Council has two primary functions under the NEPC Act:

- to make National Environment Protection Measures
- to assess and report on the implementation and effectiveness of National Environment Protection Measures in participating jurisdictions.

National Environment Protection Measures are a set of legislative instruments designed to assist in protecting or managing particular aspects of the environment, in a uniform and consistent way across all jurisdictions.

Since 1 July 2014 the Council has received operational, administrative and corporate support from the NEPC Business Services Team within the Australian Government Department of the Environment and Energy (the Department). This followed decisions to abolish the Standing Council on the Environment and Water in 2013 and the NEPC Service Corporation in 2014.

THE NATIONAL ENVIRONMENT PROTECTION COUNCIL COMMITTEE

The National Environment Protection Council (NEPC) Committee was established under the NEPC Act. The Committee consists of a NEPC Executive Officer, and a nominee of each member of the Council. The Committee is responsible for:

- assisting and advising the Council in the performance of its functions
- supporting the Council in implementing the NEPC Act
- overseeing the management of the Council's budget.

THE NATIONAL ENVIRONMENT PROTECTION COUNCIL EXECUTIVE OFFICER

The NEPC Act requires the appointment of a NEPC Executive Officer by the Council, for a period not exceeding five years. The Executive Officer is required to provide assistance and support to the Council and the Committee.

For the 2016–17 reporting year, the NEPC Executive Officer was Dr David Swanton.

INTER-JURISDICTIONAL RELATIONSHIPS

The Meeting of Environment Ministers is an ad hoc forum, consisting of environment ministers from each jurisdiction including the Commonwealth. The Meeting of Environment Ministers is the primary multi-jurisdictional forum in which national environmental issues are considered. As membership of the Council also consists of all Australian environment ministers, the Meetings of Environment Ministers are held in conjunction with meetings of the Council.

GOVERNANCE STRUCTURE OF THE COUNCIL AND THE MEETING OF ENVIRONMENT MINISTERS

The following streamlined approach to multi-jurisdictional environmental work has been agreed by Environment Ministers:

- Meetings of Environment Ministers are to occur on an ad hoc basis and run concurrently with meetings of the National Environment Protection Council as required. Agendas are to be focused on issues requiring multi-jurisdictional collaboration or decision.
- Meetings of the heads of jurisdictional environment agencies (Senior Officials Group) to be held on a regular basis—at least annually, and concurrently with NEPC Committee meetings.
- Matters under consideration will be organised into three key streams of work:
 - strategic issues
 - key existing projects relating to waste and chemicals and the National Plan for Clean Air
 - ongoing priorities relating to responsibilities under the NEPC Act, such as National Environment Protection Measures.
- Ongoing communication between the Senior Officials/NEPC Committee groups and the Heads of Environmental Protection Agencies network. Where relevant, the Heads of Environment Protection Agencies may be asked to take a role in progressing agenda items for the Senior Officials/NEPC Committee groups.
- New Zealand and the Australian Local Government Association are represented by invitation to Meetings of Environment Ministers when relevant subject matter is to be discussed.

ABOUT NATIONAL ENVIRONMENT PROTECTION MEASURES

The NEPC Act recognises the importance of communities and business in protecting Australia's environment, and that national outcomes are best achieved through regionally tailored approaches.

National Environment Protection Measures (NEPMs), created under the NEPC Act, provide an agreed nationally consistent framework of goals, standards, guidelines and protocols for protecting and managing particular aspects of the environment, including air, water, noise, site contamination, hazardous waste and recycling. A NEPM is a Commonwealth legislative instrument. Once a NEPM is made or varied, its implementation is the prerogative of each jurisdiction. Regulation is just one of a suite of implementation tools a jurisdiction may use.

National Environment Protection Measures provide a single national framework to address one or more environmental issues, with the flexibility for local implementation to take into account variability between jurisdictions. This provides certainty and consistency for business and the community in the management of these environmental issues, while reducing the need for regulation.

There are seven National Environment Protection Measures:

Air Toxics—sets out a nationally consistent approach to collection of data on toxic air pollutants (such as benzene) in order to deliver a comprehensive information base from which standards can be developed to manage these air pollutants to protect human health.

Ambient Air Quality—establishes a nationally consistent framework for monitoring and reporting on air quality, including the presence of pollutants such as carbon monoxide, lead and particulates. A variation to this NEPM took effect in January 2016.

Assessment of Site Contamination—provides a nationally consistent approach to the assessment of site contamination to ensure sound environmental management practices by regulators, site assessors, environmental auditors, landowners, developers and industry. It provides authoritative guidance to practitioners in this field.

Diesel Vehicle Emissions—supports reducing pollution from diesel vehicles. Several jurisdictions operate a suite of programs to reduce exhaust emissions from diesel vehicles.

Movement of Controlled Waste—operates to minimise potential environmental and human health impacts related to the movement of certain waste materials, by ensuring that waste to be moved between states and territories is properly identified, transported and handled in ways consistent with environmentally-sound management practices.

National Pollutant Inventory—provides a framework for collection and dissemination of information to improve ambient air and water quality, minimise environmental impacts associated with hazardous wastes and improve the sustainable use of resources.

Used Packaging Materials—operates to minimise environmental impacts of packaging materials, through design (optimising packaging to use resources more efficiently), recycling (efficiently collecting and recycling packaging) and product stewardship (demonstrating commitment by stakeholders).

GOVERNANCE

Financial management, work health and safety matters, fraud compliance and risk management are all covered by both the Commonwealth and the Department of the Environment and Energy's policies and procedures and are reported against in the Department's annual report.

No freedom of information requests were received during the reporting year.

FINANCIAL PERFORMANCE

Detailed financial matters are contained in the financial statements within the Department of the Environment and Energy 2016–17 annual report.

PROCUREMENT AND CONSULTANCIES

All such activities are undertaken in accordance with relevant Commonwealth requirements, including legislation, policies and procedures. The NEPC business services section strives to ensure the core principle of value for money in all of the NEPC procurement activities.

NEPC report on the implementation of the
National Environment
Protection (Air Toxics)
Measure

National Environment Protection (Air Toxics) Measure

PART 1 GENERAL INFORMATION

National Environment Protection Measure details

Title: National Environment Protection (Air Toxics) Measure

Made by Council: 3 December 2004

Commencement date: 20 December 2004 (advertised in the *Commonwealth of Australia Special Gazette* No. S 52904, 20 December 2004)

NEPM goal (or purpose)

The goal of the National Environment Protection (Air Toxics) Measure is set out in clause 5 of the Measure:

The national environment protection goal of this Measure is to improve the information base regarding ambient air toxics within the Australian environment in order to facilitate the development of standards following a Review of the Measure within eight years of its making.

Desired environmental outcomes

The desired environmental outcome of the National Environment Protection (Air Toxics) Measure is set out in clause 6 of the Measure:

The desired environmental outcome of this Measure is to facilitate management of air toxics in ambient air that will allow for the equivalent protection of human health and well-being, by:

- 1. providing for the generation of comparable, reliable information on the levels of toxic air pollutants ('air toxics') at sites where significantly elevated concentrations of one or more of these air toxics are likely to occur ('Stage 1 sites') and where the potential for significant population exposure to air toxics exists ('Stage 2 sites')*
- 2. establishing a consistent approach to the identification of such sites for use by jurisdictions*
- 3. establishing a consistent frame of reference ('monitoring investigation levels') for use by jurisdictions in assessing the likely significance of levels of air toxics measured at Stage 2 sites*
- 4. adopting a nationally consistent approach to monitoring air toxics at a range of locations (e.g. near major industrial sites, major roads, areas affected by wood smoke).*

Evaluation criteria

The effectiveness of the National Environment Protection (Air Toxics) Measure has been assessed against the evaluation criteria for this NEPM.

PART 2 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

This part provides a summary of jurisdictional reports on implementation and the Council’s overall assessment of the implementation of the NEPM.

Legislative, regulatory and administrative framework

Table 1: Summary of implementation frameworks

Jurisdiction	Summary of implementation frameworks
Commonwealth	<ul style="list-style-type: none"> The NEPM is implemented administratively.
New South Wales	<ul style="list-style-type: none"> The NEPM is implemented under the Protection of the Environment Operations (Clean Air) Regulation 2010 and the <i>Protection of the Environment Operations Act 1997</i>.
Victoria	<ul style="list-style-type: none"> The key legislative instrument is the State Environment Protection Policy (Air Quality Management).
Queensland	<ul style="list-style-type: none"> The NEPM is implemented under the <i>Environmental Protection Act 1994</i>, the Environmental Protection Regulation 2008, and the Environmental Protection (Air) Policy 2008.
Western Australia	<ul style="list-style-type: none"> The NEPM is implemented under the <i>National Environment Protection Council (Western Australia) Act 1996</i>, the <i>Environmental Protection Act 1986</i> and by programs in the Perth Air Quality Management Plan.
South Australia	<ul style="list-style-type: none"> The NEPM operates as an Environment Protection Policy under the <i>Environment Protection Act 1993</i>.
Tasmania	<ul style="list-style-type: none"> The NEPM is a state policy under the <i>State Policies and Projects Act 1993</i>. The management of air toxics is included in the Tasmanian Air Quality Strategy 2006. Implementation is through the Environment Protection Policy (Air Quality) 2004 and the <i>Environmental Management Pollution Control Act 1994</i>.
Australian Capital Territory	<ul style="list-style-type: none"> The NEPM is implemented under the <i>Environment Protection Act 1997</i>.
Northern Territory	<ul style="list-style-type: none"> The key legislative instruments are the <i>Waste Management and Pollution Control Act</i> and the <i>National Environment Protection Council (Northern Territory) Act 2004</i>.

Implementation issues arising

Table 2 summarises the implementation issues that arose throughout the 2016 reporting year (this NEPM has a calendar year reporting requirement). For implementation activities refer to jurisdictional reports as listed in Part 5.

Table 2: Summary of implementation issues arising

Jurisdiction	Summary of implementation issues arising
Commonwealth	<ul style="list-style-type: none"> No monitoring undertaken because the NEPM is implemented administratively. No issues reported.
New South Wales	<ul style="list-style-type: none"> No issues reported.
Victoria	<ul style="list-style-type: none"> No issues reported.
Queensland	<ul style="list-style-type: none"> Non-NEPM compliant monitoring undertaken.
Western Australia	<ul style="list-style-type: none"> Non-NEPM compliant monitoring undertaken.
South Australia	<ul style="list-style-type: none"> No issues reported.
Tasmania	<ul style="list-style-type: none"> No issues reported.
Australian Capital Territory	<ul style="list-style-type: none"> Previous desktop analysis has shown that air toxics are not an issue for the ACT airshed and no monitoring sites have been identified.
Northern Territory	<ul style="list-style-type: none"> Previous desktop analysis has shown that air toxics are not an issue for the NT airshed and no monitoring sites have been identified.

PART 3 JURISDICTIONAL REPORT ON ACTIVITIES UNDER THE NATIONAL ENVIRONMENT PROTECTION MEASURE

Identification of sites

No jurisdiction identified any new sites in the reporting period.

Reporting of monitoring of air toxics

Queensland continued monitoring air toxics in the 2016–17 reporting period including polycyclic aromatic hydrocarbons (including benzo[α]pyrene) at the Stage 2 roadside monitoring site at Woolloongabba in South East Queensland until May 2016; and at Fisherman's Landing, an industrial area north of Gladstone, from March 2016. Ambient monitoring of benzene, toluene, xylenes and formaldehyde using DOAS instrumentation continued at Springwood in south-east Queensland and central Gladstone.

In Western Australia, the Department of Water and Environmental Regulation has acquired a Remote Air Pollution Infrared Detector which is undergoing field trials in the Perth metropolitan region to determine its suitability for air quality investigations.

All monitoring results were below the NEPM monitoring investigation levels.

No other jurisdictions undertook monitoring during the reporting period.

Reporting on assessment and action if any planned or taken to manage air toxics

Monitoring to date has shown air toxics in Australia to be well below monitoring investigation levels, no jurisdiction engaged in any specific strategies or actions to manage them.

Repeat identification of Stage 1 and Stage 2 sites

No new monitoring sites were identified during the reporting period.

PART 4 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The monitoring investigation levels continue to provide a nationally consistent benchmark for assessing and comparing the concentration of ambient air toxics from diverse monitoring sites.

Most jurisdictions agree that the NEPM has been effective in providing an impetus to investigate available data and in identifying locations most likely to experience significant population exposure to elevated levels of air toxics.

PART 5 REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 1:

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NEPC report on the implementation of the
National Environment
Protection (Ambient
Air Quality) Measure

National Environment Protection (Ambient Air Quality) Measure

PART 1 GENERAL INFORMATION

National Environment Protection Measure details

Title: National Environment Protection (Ambient Air Quality) Measure

Made by Council: 26 June 1998

Commencement date: 8 July 1998 (advertised in the *Commonwealth of Australia Gazette* No. GN 27, 8 July 1998, p. 2211)

NEPM goal (or purpose)

The goal of the National Environment Protection (Ambient Air Quality) Measure is set out in clause 6 of the Measure as follows:

The National Environment Protection Goal of this Measure is to achieve the National Environment Protection Standards as assessed in accordance with the monitoring protocol (Part 4) within ten years from commencement to the extent specified in Schedule 2 column 5.

Desired environmental outcomes

The desired environmental outcome of the National Environment Protection (Ambient Air Quality) Measure is set out in clause 5 of the Measure as follows:

The desired environmental outcome of this Measure is ambient air quality that allows for the adequate protection of human health and wellbeing.

Evaluation criteria

The effectiveness of the National Environment Protection (Ambient Air Quality) Measure has been assessed against the evaluation criteria for this NEPM.

PART 2 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

This part provides a summary of jurisdictional reports on implementation and the Council's overall assessment of the implementation of the NEPM.

Legislative, regulatory and administrative framework

Table 1: Summary of implementation frameworks

Jurisdiction	Summary of implementation frameworks
Commonwealth	<ul style="list-style-type: none"> The Commonwealth implements the NEPM administratively. However, it is not required by the NEPM to undertake monitoring as there are currently no nonself governing Commonwealth territories or Commonwealth regions with a population above the 25,000 NEPM protocol threshold.
New South Wales	<ul style="list-style-type: none"> The NEPM is implemented under the <i>Protection of the Environment Operations Act 1997</i>, the Protection of the Environment Operations (General) Regulation 2009 and the Protection of the Environment Operations (Clean Air) Regulation 2010.
Victoria	<ul style="list-style-type: none"> The key legislative instruments are the state Environment Protection Policy (Ambient Air Quality) and the state Environment Protection Policy (Air Quality Management) made under the <i>Environment Protection Act 1970</i>.
Queensland	<ul style="list-style-type: none"> The NEPM is implemented under the <i>Environmental Protection Act 1994</i>, the Environmental Protection Regulation 1998, and the Environmental Protection (Air) Policy 2008.
Western Australia	<ul style="list-style-type: none"> The NEPM is implemented under the <i>National Environment Protection Council (Western Australia) Act 1996</i>, and the <i>Environmental Protection Act 1986</i>.
South Australia	<ul style="list-style-type: none"> The transitional provisions in the <i>Environment Protection (Miscellaneous) Amendment Act 2005</i> enable the NEPM to continue to operate as an Environment Protection Policy.
Tasmania	<ul style="list-style-type: none"> The NEPM is implemented under the <i>Environmental Management Pollution Control Act 1994</i>, the Environment Protection Policy (Air Quality) 2004, the Environmental Management and Pollution Control (Distributed Atmospheric Emissions) Regulations 2007 and the Tasmanian Air Quality Strategy 2006. The NEPM is a state policy under the <i>State Policies and Projects Act 1993</i>.
Australian Capital Territory	<ul style="list-style-type: none"> The NEPM is implemented by the <i>Environment Protection Regulation 1997</i> under the <i>Environment Protection Act 1997</i>.
Northern Territory	<ul style="list-style-type: none"> The key legislative instruments are the <i>Waste Management and Pollution Control Act</i> and the <i>National Environment Protection Council (Northern Territory) Act 2004</i>.

Implementation issues arising

Table 2 summarises the implementation issues that arose throughout the 2016 reporting year (this NEPM has a calendar year reporting requirement). For implementation activities please refer to jurisdictional reports as listed in Part 5.

Table 2: Summary of implementation issues arising

Jurisdiction	Summary of implementation issues arising
Commonwealth	<ul style="list-style-type: none"> No monitoring undertaken because the NEPM is implemented administratively. No issues reported.
New South Wales	<ul style="list-style-type: none"> Data capture targets were not achieved for PM_{2.5} at Wallsend in the Lower Hunter.
Victoria	<ul style="list-style-type: none"> Data capture targets were not achieved for ozone at Footscray, for sulfur dioxide at Altona North, PM₁₀ at Richmond (the site was decommissioned) and PM_{2.5} at Geelong south.
Queensland	<ul style="list-style-type: none"> The Woolloongabba monitoring site in south-east Queensland was closed on 17 June 2016 and relocated to a new location. Monitoring re-commenced on 6 June 2017. The Pimlico monitoring site in Townsville closed on 20 February 2016.
Western Australia	<ul style="list-style-type: none"> No issues reported.
South Australia	<ul style="list-style-type: none"> No issues reported.
Tasmania	<ul style="list-style-type: none"> No issues reported.
Australian Capital Territory	<ul style="list-style-type: none"> No issues reported.
Northern Territory	<ul style="list-style-type: none"> No issues reported.

PART 3 JURISDICTIONAL REPORT ON ACTIVITIES UNDER THE NATIONAL ENVIRONMENT PROTECTION MEASURE

During 2016, jurisdictions began reporting of the new NEPM particle standards, which were agreed to by Council in December 2015, and undertook further work on updating the standards for the other NEPM pollutants. They also worked on emissions reduction projects including developing product standards for wood heaters and non-road spark ignition engines.

Most jurisdictions continued to focus on programs that reduce emissions from motor vehicles and wood heaters, with several jurisdictions reporting improvements in particulate levels as a result. A number of jurisdictions continued to investigate the sources, dispersal and management of emissions from mining, non-road activities (such as rail and shipping), industry and planned burns to reduce their impact on local communities. Other monitoring technologies were also trialled in a number of jurisdictions.

The Commonwealth, along with the states and territories, worked on developing national emissions standards for non-road spark ignition engines and equipment. The Commonwealth is also reviewing vehicle emissions and fuel quality standards.

PART 4 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The NEPM continues to be valuable in the management and assessment of air quality in Australia. It provides a nationally consistent framework for the monitoring and reporting of air quality and nationally consistent benchmarks against which to assess air quality.

There continues to be improvements in the data capture levels this reporting year, allowing for more consistent and comparable results across and between jurisdictions.

Monitoring results show that NEPM standards are mostly being met and that Australia's air quality is generally good compared with international standards. Most jurisdictions consistently meet the standards and goals for nitrogen dioxide, carbon monoxide and sulfur dioxide (except in some areas with smelting activities).

Meeting the Ambient Air Quality NEPM standards for ozone and particulates remains a significant challenge for

larger metropolitan areas in a number of jurisdictions given pressures from a growing population, urban expansion, increased economic activity and the associated increase in motor vehicle use. Bushfires, controlled burning and windblown dust continue to cause exceedances of particulate levels in a number of jurisdictions, particularly those in eastern and southern Australia.

PART 5 REPORTING ON IMPLEMENTATION BY JURISDICTIONS

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NEPC report on the implementation of the
National Environment
Protection (Assessment of
Site Contamination) Measure

National Environment Protection (Assessment of Site Contamination) Measure

PART 1 GENERAL INFORMATION

National Environment Protection Measure details

Title: National Environment Protection (Assessment of Site Contamination) Measure

Made by Council: 10 December 1999

Commencement date: 22 December 1999 (advertised in the *Commonwealth of Australia Gazette* No. GN 51, 22 December 1999, p. 4246)

NEPM goal (or purpose)

The goal of the National Environment Protection (Assessment of Site Contamination) Measure is set out in clause 5(1) of the Measure as follows:

The purpose of the Measure is to establish a nationally consistent approach to the assessment of site contamination to ensure sound environmental management practices by the community which includes regulators, site assessors, environmental auditors, landowners, developers and industry.

Desired environmental outcomes

The desired environmental outcome of the National Environment Protection (Assessment of Site Contamination) Measure is set out in clause 5(2) of the Measure as follows:

The desired environmental outcome for this Measure is to provide adequate protection of human health and the environment, where site contamination has occurred, through the development of an efficient and effective national approach to the assessment of site contamination.

Evaluation criteria

The effectiveness of the National Environment Protection (Assessment of Site Contamination) Measure has been assessed against the evaluation criteria for this NEPM.

PART 2 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

This part provides a summary of jurisdictional reports on implementation and the Council's overall assessment of the implementation of the NEPM.

Legislative, regulatory and administrative framework

Table 1: Summary of implementation frameworks

Jurisdiction	Summary of implementation frameworks
Commonwealth	<ul style="list-style-type: none"> The NEPM is implemented administratively.
New South Wales	<ul style="list-style-type: none"> The NEPM is an approved guideline under the <i>Contaminated Land Management Act 1997</i>.
Victoria	<ul style="list-style-type: none"> The key legislative instruments for administering the NEPM are: <ul style="list-style-type: none"> the State Environment Protection Policy (Prevention and Management of Contamination of Land) the State Environment Protection Policy (Groundwaters of Victoria) the Industrial Waste Management Policy (Prescribed Industrial Waste) the <i>Planning and Environment Act 1987</i>. The Environmental Audit System (Contaminated Land) provides the administrative framework for assessing site contamination.
Queensland	<ul style="list-style-type: none"> The <i>Sustainable Planning Act 2009</i>, the <i>Environment Protection Act 1994</i> and the Planning Regulation 2017 are the key legislative instruments.
Western Australia	<ul style="list-style-type: none"> The NEPM is implemented through the <i>Contaminated Sites Act 2003</i> and the Contaminated Sites Regulations 2006 and associated relevant technical guidelines.
South Australia	<ul style="list-style-type: none"> The <i>Environment Protection Act 1993</i> provides a legislative framework to manage site contamination, including prescribed technical guidelines.
Tasmania	<ul style="list-style-type: none"> The NEPM is a state policy under the <i>State Policies and Projects Act 1993</i>. The NEPM is implemented under the <i>Environmental Management and Pollution Control Act 1994</i>, the Environmental Management and Pollution Control (Underground Petroleum Storage Systems) Regulations and associated guidelines.
Australian Capital Territory	<ul style="list-style-type: none"> The NEPM is implemented by the Contaminated Sites Environment Protection Policy made under the <i>Environment Protection Act 1997</i>.
Northern Territory	<ul style="list-style-type: none"> The NEPM is implemented by audits of contaminated sites required under the Northern Territory planning process, the Northern Territory Contaminated Land Guideline, legislative directive environmental audits and voluntary audits.

Implementation issues arising

The NEPM was amended in May 2013 and much jurisdictional activity in 2016–17 remained focused on integrating these amendments into legislative frameworks.

The contaminants, perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), which are two of a group of chemicals known as per- and poly-fluoroalkyl substances remained a focus across all jurisdictions. The PFAS National Environment Management Plan is being developed collaboratively among the Commonwealth, states and territories as there are major landowners and operators who are responding to contamination risks in multiple jurisdictions. The possibility of Amending the NEPM to include these contaminants could be added to a number of issues consistently raised by jurisdictions that could be considered during the next review.

For detailed implementation activities, please refer to jurisdictional reports as listed in Part 5.

Table 2: Summary of implementation issues arising

Jurisdiction	Summary of implementation issues arising
Commonwealth	No issues reported.
New South Wales	Identified the limited number of Ecological Investigation Levels for contaminants and the need for a consistent framework for the derivation and adoption of new Ecological Investigation Levels.
Victoria	Noted flow on implications for other policy areas, such as soil characterisation, onsite storage and landfilling, which had been reliant on the original NEPM approaches and values. Continued to question the adequacy of the Health Investigation Levels for lead in soil for the protection of human health following the release of the NHMRC Statement: Evidence on the effects of lead on human health in May 2015.
Queensland	Implementation of the NEPM is limited by the lack of adequate guidance for particular common types of contamination including fluorinated organic chemicals that are now commonly encountered on contaminated sites.
Western Australia	Noted the limited number of Ecological Investigation Levels provided in the NEPM is a major limitation to consistency in implementation.
South Australia	Raised the need for issues which arise before the required 10 year review of the NEPM to be appropriately identified and addressed. This will also allow easier incorporation of new scientific knowledge and updated technical information into the NEPM.
Tasmania	Again identified a need for additional clarity in assessing petroleum vapour intrusion at operating petrol stations as well as guidance on volatile organic chlorinated compounds.
Australian Capital Territory	No issues reported.
Northern Territory	As well as PFAS, asbestos, herbicides and pesticides (including Mirex) are emerging contaminants of concern in the Northern Territory.

PART 3 JURISDICTIONAL REPORT ON ACTIVITIES UNDER THE NATIONAL ENVIRONMENT PROTECTION MEASURE

Most jurisdictions have amended their implementation frameworks to fully meet the requirements of the amended NEPM.

All jurisdictions continue to report a high level of compliance with the guidelines as set out in the NEPM in the assessment and management of their contaminated sites.

Jurisdictions continued to undertake a range of activities dealing with contamination of groundwater and sediments with persistent pollutants, such as per- and poly-fluorinated substances including PFOS, PFOA, and PFHxS, primarily from firefighting training activities.

Clause 9 of the NEPM sets out the information that jurisdictions are required to report. Please refer to jurisdictional reports in Part 5.

PART 4 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The NEPM, which was amended in May 2013 and is now almost fully implemented by all jurisdictions, continues to provide consistent, consolidated guidance to professional practitioners in assessing site contamination.

Amendments have been well supported by environmental auditors and others in the site assessment industry and the consistency of site assessments and human health risk assessments submitted to agencies continues to improve across the country.

Jurisdictions identified the need for the NEPM to be more responsive to new and/or updated standards, and emerging chemicals.

PART 5 REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 3:

Annex 1:	Commonwealth	p. 108
Annex 2:	New South Wales	p. 109
Annex 3:	Victoria	p. 110
Annex 4:	Queensland	p. 112
Annex 5:	Western Australia	p. 114
Annex 6:	South Australia	p. 115
Annex 7:	Tasmania	p. 117
Annex 8:	Australian Capital Territory	p. 118
Annex 9:	Northern Territory	p. 119

NEPC report on the implementation of the
National Environment
Protection (Diesel Vehicle
Emissions) Measure

National Environment Protection (Diesel Vehicle Emissions) Measure

PART 1 GENERAL INFORMATION

Nation Environment Protection Measure details

Title: National Environment Protection (Diesel Vehicle Emissions) Measure

Made by Council: 29 June 2001

Commencement date: 18 July 2001 (advertised in the *Commonwealth of Australia Gazette* No. GN 28, 18 July 2001, p. 2014)

NEPM goal (or purpose)

The goal of the National Environment Protection (Diesel Vehicle Emissions) Measure is set out in clause 10 of the Measure as follows:

The goal of this Measure is to reduce exhaust emissions from diesel vehicles, by facilitating compliance with in-service emissions standards for diesel vehicles.

Desired environmental outcomes

The desired environmental outcome of the National Environment Protection (Diesel Vehicle Emissions) Measure is set out in clause 11 of the Measure as follows:

The desired environmental outcome of this Measure is to reduce pollution from in-service diesel vehicles.

Evaluation criteria

The effectiveness of the National Environment Protection (Diesel Vehicle Emissions) Measure has been assessed against the evaluation criteria for this NEPM.

PART 2 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

This part provides a summary of jurisdictional reports on implementation and the Council's overall assessment of the implementation of the NEPM.

Legislative, regulatory and administrative framework

Table 1: Summary of implementation frameworks

Jurisdiction	Summary of implementation frameworks
Commonwealth	<ul style="list-style-type: none"> The NEPM is implemented administratively. The NEPM is supported by the Australian Design Rules under the <i>Motor Vehicle Standards Act 1989</i>, and the <i>Fuel Quality Standards Act 2000</i> and fuel tax credit arrangements.
New South Wales	<ul style="list-style-type: none"> The key legislative instruments are the <i>Protection of the Environment Operations Act 1997</i> and the Protection of the Environment Operations (Clean Air) Regulation 2010. The NEPM is implemented by Environment Protection Authority and Department of Roads and Maritime Services programs.
Victoria	<ul style="list-style-type: none"> The primary legislative tools are the Environment Protection (Vehicle Emissions) Regulations 2013 under the <i>Environment Protection Act 1970</i>. These Regulations no longer deal with heavy vehicles over 4.5 tonnes. Compliance with national heavy vehicle regulation is overseen by VicRoads.
Queensland	<ul style="list-style-type: none"> The NEPM is implemented by the <i>National Environment Protection Council (Queensland) Act 1994</i>. The Department of Transport and Main Roads is responsible for implementing and reporting on the Diesel NEPM.
Western Australia	<ul style="list-style-type: none"> The NEPM is implemented by the <i>National Environment Protection Council (Western Australia) Act 1996</i>, and the <i>Environmental Protection Act 1986</i>. Vehicle emissions in Western Australia are regulated under the <i>Road Traffic (Vehicles) Act 2012</i> and Road Traffic (Vehicles) Regulations 2014, administered by the Department of Transport.
South Australia	<ul style="list-style-type: none"> The transitional provisions in the <i>Environment Protection (Miscellaneous) Amendment Act 2005</i> enable the NEPM to continue to operate as an Environment Protection Policy. Vehicle emissions in South Australia are regulated under Road Traffic (Vehicle Standards) Rules 1999, administered by the Department of Planning, Transport and Infrastructure.
Tasmania	<ul style="list-style-type: none"> The NEPM is a state policy under the <i>State Policies and Projects Act 1993</i>. The Department of State Growth uses the 'ten second rule' to target smoky motor vehicles.
Australian Capital Territory	<ul style="list-style-type: none"> The key legislative instrument is the Road Transport (Vehicle Registration) Regulation 2000, implemented by Access Canberra.
Northern Territory	<ul style="list-style-type: none"> Vehicle performance standards are enforced under the <i>Motor Vehicles Act</i> implemented by the Department of Transport.

Implementation issues arising

Table 2 summarises the implementation issues that arose throughout the 2016–17 reporting year. For implementation activities refer to jurisdictional reports as listed in Part 5.

Table 2: Summary of implementation issues arising

Jurisdiction	Summary of implementation issues arising
Commonwealth	<ul style="list-style-type: none"> No issues reported.
New South Wales	<ul style="list-style-type: none"> No issues reported.
Victoria	<ul style="list-style-type: none"> No issues reported. The VIPAC Emissions Test Facility remained closed during the reporting period due to high maintenance costs and low throughput of vehicles.
Queensland	<ul style="list-style-type: none"> No issues reported.
Western Australia	<ul style="list-style-type: none"> No issues reported.
South Australia	<ul style="list-style-type: none"> No issues reported. The Regency Park Emissions Test Facility remained closed during the reporting period due to high maintenance costs and low throughput of vehicles. Private sector involvement is being sought to provide alternative services.
Tasmania	<ul style="list-style-type: none"> No specific issues were reported, however the NEPM is of limited relevance because diesel vehicles are not major contributors to air emissions in urban areas.
Australian Capital Territory	<ul style="list-style-type: none"> No specific issues were reported, however the NEPM is of limited relevance because diesel vehicles are not major contributors to air emissions in the ACT airshed.
Northern Territory	<ul style="list-style-type: none"> No specific issues were reported, however the NEPM is of limited relevance because diesel vehicles are not major contributors to air emissions in urban areas.

PART 3 JURISDICTIONAL REPORT ON ACTIVITIES UNDER THE NATIONAL ENVIRONMENT PROTECTION MEASURE

In October 2015, the Australian Government announced a whole-of-government review of vehicle emissions through the establishment of a Ministerial Forum on Vehicle Emissions. Government decisions on new vehicle emissions measures are expected in 2017. The Australian Government completed a statutory review of the *Fuel Quality Standards Act 2000* in April 2016 and is reviewing the legislative instruments (including fuel standards) made under the Act.

Jurisdictions continue to run a number of programs to monitor and reduce emissions from their diesel fleets, including smoky vehicle reporting programs, upgrades to government vehicle and bus fleets and emissions testing and repair programs. New South Wales continued to run diesel retrofit programs for both on- and off-road vehicles.

For details of individual programs and initiatives, please refer to jurisdictional reports listed in Part 5.

PART 4 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

While there are some limitations on the ability to quantify the overall effectiveness of the NEPM based initiatives implemented to date, jurisdictions report that the NEPM continues to help reduce emissions from diesel vehicles across Australia and is a useful component of the broader framework to manage vehicle emissions and air quality more generally.

A number of jurisdictions continued to note increases in the numbers of registered on and off-road diesel vehicles resulting in them becoming an increasingly higher proportion of their in-service fleets. Fleet turnover, combined with the introduction of more stringent vehicle emissions regulations, means considerable progress is being made toward achieving NEPM goals through national initiatives including the Australian Design Rules and fuel quality standards, particularly for smaller vehicles.

PART 5 REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 4:

Annex 1:	Commonwealth	p. 122
Annex 2:	New South Wales	p. 124
Annex 3:	Victoria	p. 129
Annex 4:	Queensland	p. 131
Annex 5:	Western Australia	p. 134
Annex 6:	South Australia	p. 137
Annex 7:	Tasmania	p. 139
Annex 8:	Australian Capital Territory	p. 141
Annex 9:	Northern Territory	p. 143

NEPC report on the implementation of the
National Environment Protection
(Movement of Controlled Waste
between States and Territories)
Measure

National Environment Protection (Movement of Controlled Waste between States and Territories) Measure

PART 1 GENERAL INFORMATION

National Environment Protection Measure details

Title: National Environment Protection Council (Movement of Controlled Waste between States and Territories) Measure

Made by Council: 26 June 1998

Commencement date: 8 July 1998 (advertised in the *Commonwealth of Australia Gazette* No. GN 27, 8 July 1998, p. 2212)

NEPM goal (or purpose)

The desired goal for the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure is set out in clause 11 of the Measure as follows:

The National environment protection goal of this Measure is to assist in achieving the desired environmental outcomes set out in clause 12 by providing a basis for ensuring that controlled wastes which are to be moved between states and territories are properly identified, transported, and otherwise handled in ways consistent with environmentally sound practices for the management of such wastes.

Desired environmental outcomes

The desired environmental outcome for the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure is set out in clause 12 of the Measure as follows:

The desired environmental outcomes of this Measure are to minimise the potential for adverse impacts associated with the movement of controlled waste on the environment and human health.

Evaluation criteria

The effectiveness of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure has been assessed against the evaluation criteria for this NEPM.

PART 2 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

This part provides a summary of jurisdictional reports on implementation and the Council's overall assessment of the implementation of the NEPM.

Legislative, regulatory and administrative framework

Table 1: Summary of implementation frameworks

Jurisdiction	Summary of implementation frameworks
Commonwealth	The NEPM is implemented administratively.
New South Wales	The key legislative instruments are the <i>Protection of the Environment Operations Act 1997</i> and the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> .
Victoria	The key legislative instruments are the <i>Environment Protection Act 1970</i> , the <i>Environment Protection (Industrial Waste Resource) Regulations 2009</i> , and the <i>Waste Management Policy (Movement of Controlled Waste between States and Territories) 2001</i> .
Queensland	The key legislative instrument is the <i>Environmental Protection Act 1994</i> . Requirements for the licensing of controlled waste transporters are included in the <i>Environmental Protection Regulation 2008</i> .
Western Australia	The primary legislative instruments are the <i>Environmental Protection Act 1986</i> and the <i>Environmental Protection (Controlled Waste) Regulations 2004</i> .
South Australia	The NEPM is implemented by the <i>Environment Protection (Movement of Controlled Waste) Policy 2014</i> under the <i>Environment Protection Act 1993</i> .
Tasmania	The NEPM is a state policy under the <i>State Policies and Projects Act 1993</i> . The NEPM is implemented under the <i>Environmental Management and Pollution Control Act 1994</i> .
Australian Capital Territory	The key legislative instruments are the <i>Environment Protection Act 1997</i> and the <i>Environment Protection Regulations 2005</i> .
Northern Territory	The key legislative instruments are the <i>Waste Management and Pollution Control Act</i> and the <i>Dangerous Goods (National Uniform Legislation) Act</i> .

Implementation issues arising

No implementation issues were reported by jurisdictions.

PART 3 JURISDICTIONAL REPORT ON ACTIVITIES UNDER THE NATIONAL ENVIRONMENT PROTECTION MEASURE

During the reporting period, the Implementation Agreement between state and territory agencies on matters relating to the implementation of the NEPM was reviewed and the revised Agreement was signed by all jurisdictions on 1 May 2017.

The Commonwealth continued work towards a single, nationally consistent electronic tracking system for inter-and intrastate movements of hazardous and controlled wastes.

A number of jurisdictions focused on the transportation of industrial waste between states to both limit the possibility of the improper movement of waste and ensure its disposal at permitted facilities.

There continues to be close consultation between state and territory agencies, established under the NEPM agreement.

The tables below provide a national summary of the data for quantities of each waste category transported. The waste categories group the 73 waste streams and constituents listed in Schedule A of the NEPM into 15 broader types.

Table 2: Summary of total movements of controlled waste within Australia, imports by states and territories for the period 1 July 2016–30 June 2017

Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ex terr*	Total
A	Plating and heat treatment	2.14	1.00	0.4	15.95	0.00	0.00	0.00	0.00	n/a	19.49
B	Acids	20,117.01	148.0	2.8	0.00	278.48	6.00	0.00	0.00	n/a	20,552.59
C	Alkalis	137.99	133.0	264.2	0.00	728.51	0.20	0.00	0.00	n/a	1262.90
D	Inorganic chemicals	23,483.24	12,655.0	1614.8	0.00	177,369.68	4326.22	0.00	0.00	n/a	220,449.04
E	Reactive chemicals	11.45	8.0	106.0	0.00	0.96	0.02	0.00	0.00	n/a	125.43
F	Paints, resins, inks, organic sludges	2210.35	5056.0	309.4	0.00	2352.86	114.00	0.00	0.00	n/a	10,042.61
G	Organic solvents	343.33	1400.0	6481.8	0.00	189.42	30.00	0.00	0.00	n/a	8444.55
H	Pesticides	8.43	725.0	22.7	0.00	40.04	0.00	0.00	0.00	n/a	857.17
J	Oils	5863.83	3656.0	26,446.2	402.00	2302.53	65.00	391.90	751.55	n/a	39,897.91
K	Putrescible/organic waste	9240.05	2363.0	3630.5	356.00	0.00	92.00	0.00	0.00	n/a	15,681.55
L	Industrial washwater	0.00	982.0	4552.7	0.00	0.00	0.00	0.00	0.00	n/a	5534.70
M	Organic chemicals	608.99	413.0	31,051.2	35.70	56.67	0.15	0.00	0.00	n/a	32,180.71
N	Soil/sludge	3947.24	6029.0	131.6	0.00	396.84	37.50	660.50	0.00	n/a	11,203.68
R	Clinical and pharmaceutical	342.46	1743.0	12.5	0.00	2067.34	0.60	223.70	0.00	n/a	4389.60
T	Misc.	841.34	306.0	0.4	0.00	46.71	3.50	0.00	0.00	n/a	1197.95
	Total (tonnes)	67,157.85	36,618.0	74,640.8	809.65	185,830.04	4675.19	1276.10	751.55	n/a	371,839.58

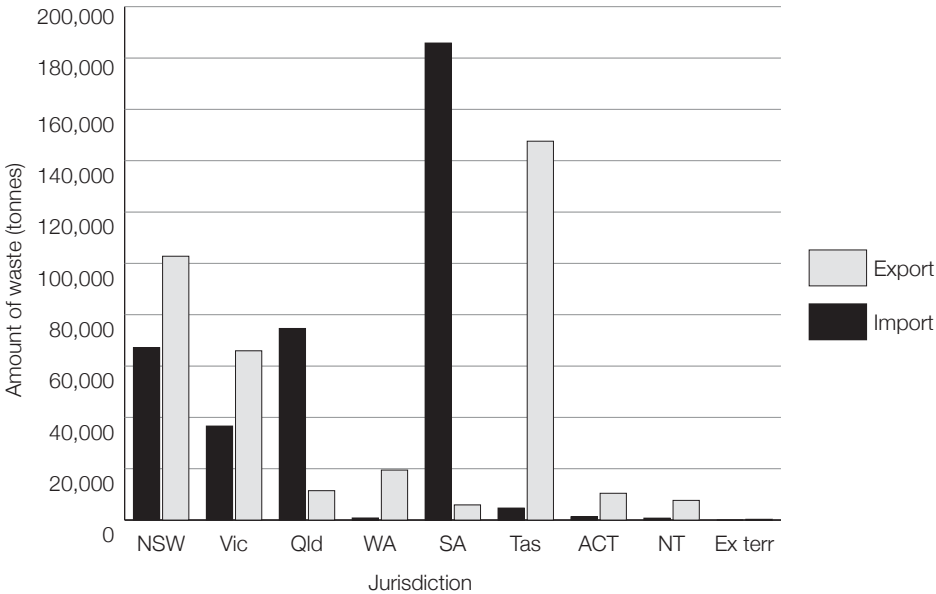
Note: Information regarding external territories (Ex terr) has only been provided since the reporting year 2009–10.

Table 3: Summary of total movements of controlled waste within Australia, exports by states and territories for the period 1 July 2016–30 June 2017

Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ex terr* [†]	Total
A	Plating and heat treatment	0.4	0.00	1.38	0.00	0.76	1.00	0.00	15.95	0.00	19.49
B	Acids	147.16	20,068.11	41.00	25.52	49.48	29.00	0.42	185.60	6.00	20,552.29
C	Alkalis	183.82	270.12	66.67	6.87	4.00	11.00	0.58	719.64	0.20	1262.90
D	Inorganic chemicals	12,817.53	32,617.86	5879.15	16,942.94	3914.78	14,7174.46	51.18	1049.92	1.22	220,449.04
E	Reactive chemicals	113.00	2.76	0.00	0.00	0.00	0.00	0.08	0.00	0.02	125.43
F	Paints, resins, inks, organic sludges	4151.20	3616.96	1083.30	299.50	422.07	17.00	23.33	159.31	2.00	10,042.61
G	Organic solvents	7261.61	157.01	269.30	326.27	339.04	77.00	21.09	0.00	30.00	8444.55
H	Pesticides	260.04	40.44	276.70	446.70	10.30	0.00	0.33	0.00	0.00	857.17
J	Oils	27,647.22	3440.89	985.00	1257.07	483.34	174.30	2946.05	2910.83	65.00	39,387.91
K	Putrescible/organic waste	5890.50	2714.72	0.00	12.00	74.00	0.00	6537.33	356.00	92.00	15,681.55
L	Industrial washwater	5484.30	2.20	48.00	0.00	42.20	0.00	0.00	0.00	0.00	5534.70
M	Organic chemicals	31,233.27	257.39	428.10	10.09	192.08	54.30	117.92	86.70	0.15	32,180.71
N	Soil/sludge	6612.49	2308.93	237.70	61.35	33.89	344.00	165.53	129.28	37.50	11,203.68
R	Clinical and pharmaceutical	721.70	12.95	432.00	63.00	313.00	51.30	342.01	2021.04	0.60	4389.60
T	Misc.	256.28	429.76	0.00	22.77	21.00	20.00	229.41	32.15	3.50	1197.95
	Total (tonnes)	102,780.88	65,940.10	3918.6	19,474.08	5899.94	147,953.36	10,435.26	7666.42	238.19	371,839.58

[Note: Information regarding external territories (Ex terr) has only been provided since the reporting year 2009–10.

Figure 1: Tonnage of controlled waste moved within Australia 2016–17*



*Note: Information regarding Australia's external territories has been provided only since the reporting year 2009–10 (and in Figure 1, the scale of the vertical axis does not allow for the 238.19 tonnes of waste exported from Australia's external territories to be visually represented).

Figure 2: Tonnage of controlled waste moved within Australia 1999–2017

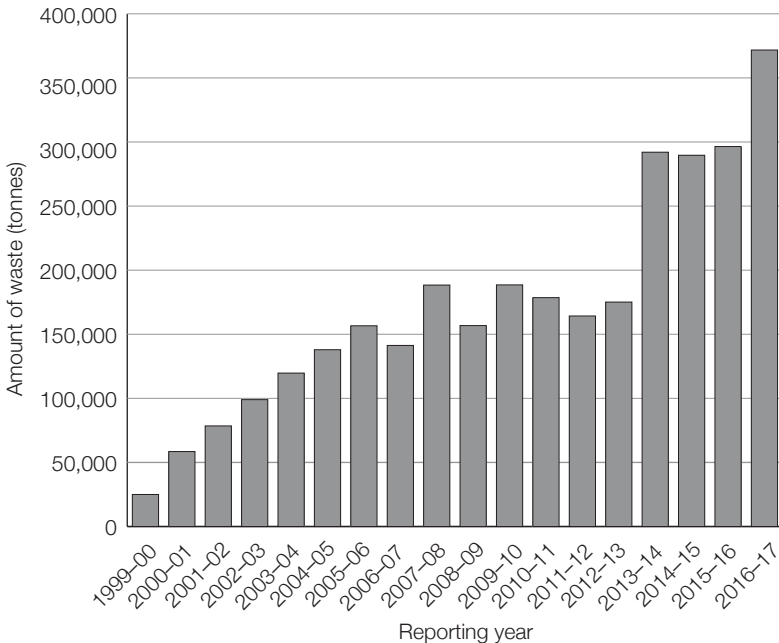
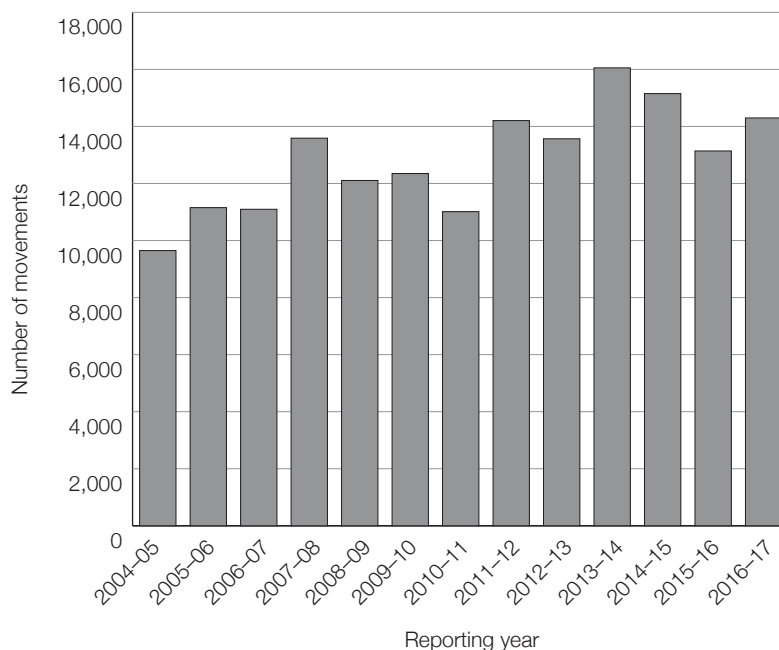


Figure 3: Number of movements of controlled waste within Australia 2004–17*



*Note: Information regarding number of movements has been provided only since the reporting year 2004–05.

PART 4 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Jurisdictions reported that the NEPM continues to provide an effective means of tracking the interstate movement of controlled waste between states and territories. The NEPM also continues to be an effective tool in minimising the potential for adverse impacts associated with the movement of controlled waste on human health and the environment. There remains a high level of communication and cooperation between jurisdictions for this NEPM, particularly regarding the appropriateness of issuing consignment authorisations and discrepancies in wastes moving between states and territories.

PART 5 REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 5:

Annex 1:	Commonwealth	p. 146
Annex 2:	New South Wales	p. 147
Annex 3:	Victoria	p. 150
Annex 4:	Queensland	p. 153
Annex 5:	Western Australia	p. 156
Annex 6:	South Australia	p. 158
Annex 7:	Tasmania	p. 161
Annex 8:	Australian Capital Territory	p. 164
Annex 9:	Northern Territory	p. 167

NEPC report on the implementation of the
National Environment
Protection (National Pollutant
Inventory) Measure

National Environment Protection (National Pollutant Inventory) Measure

PART 1 GENERAL INFORMATION

National Environment Protection Measure details

Title: National Environment Protection (National Pollutant Inventory) Measure

Made by Council: 27 February 1998

Commencement date: Clauses 1 and 2 of the Measure commenced on the date of Gazettal 4 March 1998 (advertised in the *Commonwealth of Australia Gazette* No. S 89, 4 March 1998, p. 1) with the remaining provisions of the Measure commencing on 1 July 1998.

NEPM goal (or purpose)

The environment protection goals are established by clause 6 of this Measure as follows:

The national environment protection goals established by this Measure are to:

- (a) collect a broad base of information on emissions and transfers of substances on the reporting list*
- (b) disseminate the information collected to all sectors of the community in a useful, accessible and understandable form.*

In summary, the National Pollutant Inventory NEPM provides the framework for the development and establishment of the National Pollutant Inventory which is an internet database designed to provide publicly available information on the types and amounts of certain chemicals being emitted to the air, land and water.

Desired environmental outcomes

The desired environmental outcomes, as set out in clause 5 of the Measure, are:

- (a) the maintenance and improvement of:*
 - (i) ambient air quality*
 - (ii) ambient marine, estuarine and fresh water quality*
- (b) the minimisation of environmental impacts associated with hazardous wastes*
- (c) an improvement in the sustainable use of resources.*

Evaluation criteria

The effectiveness of the National Environment Protection (National Pollutant Inventory) Measure has been assessed against the evaluation criteria for this NEPM.

PART 2 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

This part provides a summary of jurisdictional reports on implementation and the Council's overall assessment of the implementation of the NEPM.

Legislative, regulatory and administrative framework

Table 1: Summary of implementation frameworks

Jurisdiction	Summary of implementation frameworks
Commonwealth	The NEPM is implemented administratively.
New South Wales	The key legislative instrument is the Protection of the Environment Operations (General) Regulation 2009 under the <i>Protection of the Environment Operations Act 1997</i> .
Victoria	The key legislative instrument is the Waste Management Policy (National Pollutant Inventory) 2012 under the <i>Environment Protection Act 1970</i> .
Queensland	The NEPM is implemented under the <i>Environmental Protection Act 1994</i> and the <i>Environmental Protection Regulation 2008</i> .
Western Australia	The key legislative instrument is the Environmental Protection (NEPM—National Pollutant Inventory) Regulations 1998 under the <i>Environmental Protection Act 1986</i> .
South Australia	The NEPM operates as an Environment Protection Policy under the <i>Environment Protection Act 1993</i> .
Tasmania	The NEPM is a state policy under the <i>State Policies and Projects Act 1993</i> and is implemented through the <i>Environmental Management and Pollution Control Act 1993</i> .
Australian Capital Territory	The key legislative instrument is the <i>Environment Protection Act 1997</i> .
Northern Territory	The NEPM is implemented by the Environment Protection (National Pollutant Inventory) Objective established under the <i>Waste Management and Pollution Control Act 1998</i> .

Implementation issues arising

A summary of implementation issues arising during 2015–16 (the National Pollutant Inventory NEPM reporting year is a year behind the current annual report year) can be found in Table 2. For implementation activities refer to jurisdictional reports listed in Appendix 6, see page 171.

Table 2: Summary of implementation issues arising

Jurisdiction	Summary of implementation issues arising
Commonwealth	<p>There was an increase in the number of complaints related to defects in the behaviour of the National Pollutant Inventory database.</p> <p>For the first time, the Commonwealth published the National Pollutant Inventory dataset on the whole-of-government platform, data.gov.au.</p>
New South Wales	<p>The National Pollutant Inventory online reporting system has led to improvements in the quality and accuracy of facility data by including estimation and validation tools and minimising the need for manual data entry.</p> <p>Enquiries from public and media continue to demonstrate a growing awareness of the dataset, however there continues to be a strong need to provide contextual information about the data</p>
Victoria	Noted the absence of penalty provisions aiding enforcement makes it difficult to ensure that the National Pollutant Inventory reports are submitted on time and contain accurate and comprehensive data.
Queensland	Again noted that opportunities exist to improve the effectiveness and implementation of the National Pollutant Inventory through a strategic review. Queensland supports investigating these opportunities through the detailed review of the current National Environmental Protection (National Pollutant Inventory) Measure.
Western Australia	Identified opportunities for enhanced administration of the National Pollutant Inventory NEPM through the collection and reporting of aggregated emissions data.
South Australia	<p>Welcomed the strategic review of the NEPM.</p> <p>A detailed air emissions inventory remains a strategic priority for both the National Pollutant Inventory programme and the SA EPA.</p>
Tasmania	Planning an internal review of industry reporting levels in response to feedback from industry about reporting capability, awareness of NEPM obligations, and potential under-reporting.
Australian Capital Territory	As in last year's report there was a continued need for training of reporters to use the online reporting system due to staff turnover.
Northern Territory	A reduction in Commonwealth funding has led to a reduction in administration of the NPI, the validation of reports and the performance of AED (aggregate emissions data) modelling as required by the NEPM before submission to the Commonwealth.

PART 3 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Memoranda of Understanding (MoUs) have been signed at heads of agency level between each jurisdiction and the Commonwealth. An MOU is in place until June 2018.

The MoUs set out those NEPM matters to be agreed by individual jurisdictions and the Commonwealth.

Website and public awareness

Reporting information is available on the National Pollutant Inventory website at www.npi.gov.au. The number of visitors to the National Pollutant Inventory website increased from 274,066 in 2015–16 to 288,026 in 2016–17.

The free phone line and the public email box have been used to inform the public. Ninety-six calls were received by the Commonwealth through the free call phone line, however most calls were from industry seeking advice on National Pollutant Inventory reporting requirements. 224 email responses were provided to questions received via the National Pollutant Inventory website and email address.

On-line reporting

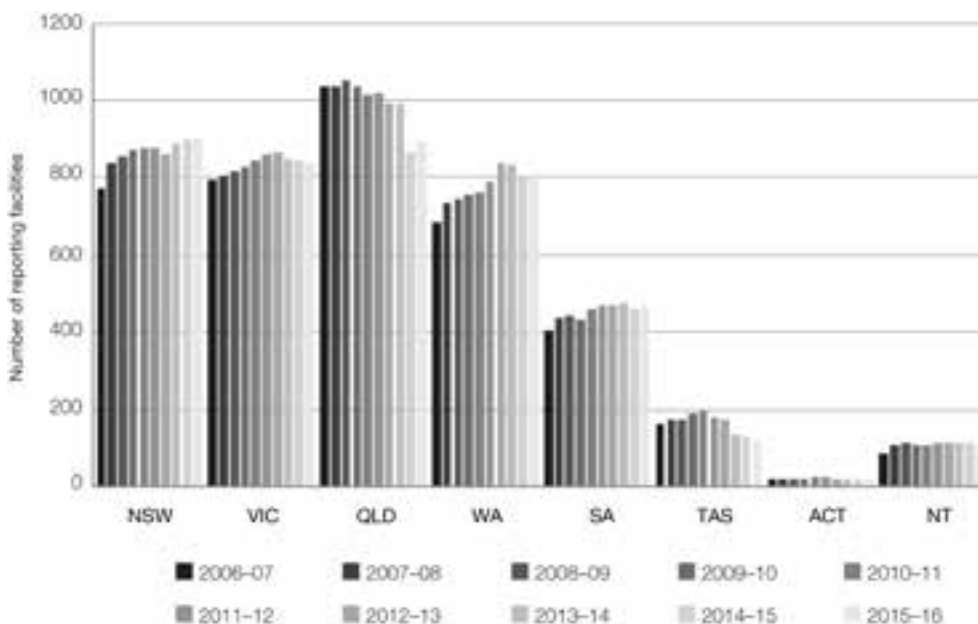
The Commonwealth continued to maintain the National Pollutant Inventory website and database search engine. This work ensured that relevant and up to date information is accessible to the public and other key stakeholders.

The Commonwealth published the 2015–16 National Pollutant Inventory data in March 2017. The number of facilities reporting to the inventory rose from 4133 in 2014–15 to 4165 in 2015–16.

Industry facility reporting

Figure 1 shows that the number of facilities reporting to the National Pollutant Inventory in all jurisdictions over the past 10 years.

Figure 1: Number of reporting facilities in each jurisdiction by year since 2006–07



PART 4 REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 6, see page 171.

NEPC report on the implementation of the
National Environment
Protection (Used Packaging
Materials) Measure

National Environment Protection (Used Packaging Materials) Measure

PART 1 GENERAL INFORMATION

National Environment Protection Measure details

Title: National Environment Protection (Used Packaging Materials) Measure

Commencement date: 15 July 2005

NEPM goal (or purpose)

The environment protection goal is established by clause 6 of this Measure as follows:

The goal of the Measure is to reduce environmental degradation arising from the disposal of used packaging and conserve virgin materials through the encouragement of re-use and recycling of used packaging materials by supporting and complementing the voluntary strategies in the National Packaging Covenant.

Desired environmental outcomes

The desired environmental outcomes from the combination of the Australian Packaging Covenant and the Measure are to minimise the overall environmental impacts of packaging by pursuing the Covenant performance goals:

1. **Design:** optimise packaging to use resources efficiently and reduce environmental impact without compromising product quality and safety.
2. **Recycling:** efficiently collect and recycle packaging.
3. **Product stewardship:** demonstrate commitment by all signatories.

Evaluation criteria

The effectiveness of the National Environment Protection (Used Packaging Materials) Measure has been assessed against the evaluation criteria for this NEPM.

PART 2 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

This part provides a summary of jurisdictional reports on implementation and the Council’s overall assessment of the implementation of the NEPM.

Legislative, regulatory and administrative framework

Table 1: Summary of implementation frameworks

Jurisdiction	Summary of implementation frameworks
Commonwealth	The Commonwealth’s implementing legislation applies only to its jurisdictional territories and to brand owner companies with over 50 per cent government ownership such as Australia Post.
New South Wales	The NEPM is implemented by the Protection of the Environment Operations (Waste) Regulation 2005.
Victoria	The NEPM is implemented by the Waste Management Policy (Used Packaging Materials) 2006, under the <i>Environment Protection Act 1970</i> .
Queensland	The NEPM is implemented by the Waste Reduction and Recycling Regulation 2011.
Western Australia	The NEPM is implemented by the Environmental Protection NEPM—Used Packaging Materials) Regulations 2013 under the <i>Environmental Protection Act 1986</i> .
South Australia	The NEPM is legally enforced by the Environment Protection (Used Packaging Materials) Policy 2012.
Tasmania	The NEPM is implemented under the <i>Environmental Management and Pollution Control Act 1994</i> . The NEPM is a state policy under the <i>State Policies and Projects Act 1993</i> .
Australian Capital Territory	The NEPM is implemented by the Used Packaging Materials Industry Waste Reduction Plan under the <i>Waste Minimisation Act 2001</i> .
Northern Territory	The NT Government is not a signatory to the Australian Packaging Covenant, and there are no known major brand owners based in the NT who are likely to have obligations under the NEPM. There is provision under the <i>Waste Management and Pollution Control Act 1998</i> to enforce the NEPM if needed.

Implementation issues arising

Table 2 summarises the implementation issues that arose throughout the 2016–17 reporting year. For detailed implementation activities refer to jurisdictional reports as listed in Appendix 7.

In August 2015, a meeting of jurisdictions and industry resolved that jurisdictions would not carry out the brand owner audit during the reporting period, and that industry would take responsibility for brand owner audits from 1 July 2016.

Table 2: Summary of implementation issues arising

Jurisdiction	Summary of implementation issues arising
Commonwealth	No issues reported.
New South Wales	No issues reported.
Victoria	No issues reported.
Queensland	No issues reported.
Western Australia	No Issues reported.
South Australia	No issues reported.
Tasmania	No issues reported.
Australian Capital Territory	No issues reported.
Northern Territory	No issues reported.

PART 3 JURISDICTIONAL REPORT ON ACTIVITIES UNDER THE NATIONAL ENVIRONMENT PROTECTION MEASURE

The NEPM sets out the information that jurisdictions are required to report on. This information has been provided by jurisdictions in their individual reports listed in Part 5.

A number of jurisdictions increased their NEPM advice, collaboration and compliance activities, while others focused on projects either funded by the Australian Packaging Covenant or under state-based waste reduction or recycling programs.

The NEPM contributes to better environmental outcomes by providing a regulatory safety net for the Australian Packaging Covenant.

Table 3: Australian Packaging Covenant signatories at 30 June 2017

ACT	4
NSW	394
QLD	71
SA	50
TAS	17
VIC	341
WA	43
TOTAL	90

Kerbside recycling

Local government authorities have continued to collect data on the composition of kerbside recycling waste streams. The amount and type of data collected in each jurisdiction varies and, therefore, no direct comparison between jurisdictions can be made.

Further information is available in jurisdictional reports listed in Appendix 7.

Complaints, investigations and prosecutions

No complaints regarding brand owners or Covenant signatories were received in the reporting period, and no investigations or prosecutions were necessary.

PART 4 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Major reforms to the operation of the Australian Packaging Covenant have been initiated in response to a comprehensive review by the Commonwealth Government. These reforms include changes to Covenant's governance structure, funding arrangements and the release of a new covenant. As a result of this structural change, the reporting methodology for the new covenant is evolving and the Australian Packaging Covenant is working to refine the process.

At the end of June 2017, there were 919 covenant signatories, of which 93 per cent were compliant.

Covenant signatories again showed continued improvement in all key performance reporting indicators, particularly in the areas of developing policies for buying products made from recycled packaging and reducing litter in the waste stream.

The NEPM remains a less effective mechanism in the Northern Territory as the major contributors to the waste stream are brand-owners not based in the Territory. Only two of the 17 Northern Territory councils have kerbside recycling.

PART 5 REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 7, see page 187.

Appendix 1: Jurisdictional reports on the implementation and effectiveness of the Air Toxics National Environment Protection Measure

Commonwealth

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for the Commonwealth by the Hon Josh Frydenberg MP, Minister for the Environment and Energy, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- The Commonwealth implements the National Environment Protection (Air Toxics) Measure (Air Toxics NEPM) administratively and ensures that its obligations under the *National Environment Protection Council Act 1994* are met.
- In 2016–17 the Commonwealth identified no Commonwealth sites on which there was a potential for significant population exposure to elevated levels of air toxics.
- At their meeting on 15 December 2015, Australia’s environment ministers established the National Clean Air Agreement. The Agreement will deliver actions to reduce air pollution and establishes a process for jurisdictions to work cooperatively to address emerging air quality issues—ensuring Australians continue to enjoy clean air into the future.
- In 2016–17, the Commonwealth in collaboration with the states and territories continued to progress work to reduce emissions from nationally significant sources. One Commonwealth-led initiative and a key action under the Agreement has focused on introducing emissions standards for non-road spark ignition engines and equipment, such as petrol-powered outdoor power equipment and marine outboard engines. These products emit high levels of PM₁₀, nitrogen dioxide and chemicals that lead to ozone formation. These new emissions standards are expected to be in place by end 2017, with phase-in timeframes for commencement to allow industry to transition to the new standards.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The Air Toxics NEPM provides a framework for assessing the ambient levels of specified air toxics in a range of locations and improving the information base regarding ambient air toxics in Australia.

New South Wales

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for New South Wales by the Hon Gabrielle Upton, Minister for the Environment, Minister for Local Government, and Minister for Heritage for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

Legislative, regulatory and administrative framework

The implementation of the National Environment Protection (Air Toxics) Measure (NEPM) in New South Wales is coordinated by the Environment Protection Authority. Under Part 3, Clause 8 of the NEPM, the identification of Stage 1 and Stage 2 sites for monitoring of air toxics was required within 12 months of NEPM commencement in 2004. New South Wales completed the desktop analysis and reported the results in the implementation report for the reporting year ended 30 June 2005.

Under Part 3, Clause 9 of the NEPM, monitoring of air toxics is required at Stage 2 sites (i.e. sites prioritised for monitoring based on the potential for significant population exposure). New South Wales conducted ambient monitoring for the five NEPM air toxics at two Stage 2 sites in the Sydney metropolitan area using a 1-day-in-6 cycle for a full year from October 2008 to October 2009, and reported the results in the implementation report for the reporting year ended 30 June 2010.

The *Protection of the Environment Operations Act 1997* and the Protection of the Environment Operations (Clean Air) Regulation 2010 provide the regulatory framework for action to address air emissions including managing air toxics in New South Wales.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

New South Wales has achieved the NEPM goal to estimate human exposure to the five NEPM air toxics using a consistent national framework, by conducting ambient monitoring at two Stage 2 monitoring sites in the Sydney metropolitan area. The monitoring demonstrated that the five NEPM air toxics are within monitoring investigation levels at all monitoring sites.

Reporting of monitoring of air toxics

New South Wales data collection commenced in October 2008 and concluded in October 2009.

The Turella site collected data on: formaldehyde and acetaldehyde; 19 polycyclic aromatic hydrocarbons including benzo[α]pyrene; and 41 volatile organic compounds including benzene, toluene and xylenes.

The Rozelle site collected data on: formaldehyde and acetaldehyde; and 41 volatile organic compounds including benzene, toluene and xylenes.

National Environment Protection Measure-compliant sampling and analysis methods were used.

Tables 1 to 5 of the NSW implementation report for the reporting year ended 30 June 2010 (www.scew.gov.au/system/files/resources/ee20bb51-e1cd-82b4-559c-699771b152e7/files/nepc-annual-report-09-10.pdf) and reproduced at **Attachment A**, summarise the monitoring results for the five air toxics—benzene, benzo[α]pyrene as a marker for polycyclic aromatic hydrocarbons, formaldehyde, toluene and xylenes.

The results clearly showed levels of air toxics were below the monitoring investigation levels. There were no occasions on which any of the air toxics monitored exceeded the monitoring investigation levels at any location. The most significant results were for benzo[α]pyrene, with levels of approximately 65 per cent of the NEPM monitoring investigation level.

Attachment A New South Wales air toxics monitoring results 2008–09

Tables 1 to 5 show monitoring results for benzene, benzo[α]pyrene as a marker for polycyclic aromatic hydrocarbons, formaldehyde, toluene and xylenes 2008–09. They are reproduced from the NSW Report to the National Environment Protection Council (NEPC) on the implementation of the National Environment Protection (Air Toxics) Measure, for the reporting year ended 30 June 2010.

Table 1: Monitoring results—benzene

	Rozelle	Turrella
Air toxic	benzene	benzene
Monitoring method	USEPA TO-15	USEPA TO-15
Period of monitoring	2/10/08 to 8/10/09	2/10/08 to 29/9/09
Number of valid results	32	36
Maximum 24-hour average concentration	0.90 ppb	2.00 ppb
Annual average concentration (as arithmetic mean)	0.26 ppb	0.38 ppb
Arithmetic standard deviation of 24-hour average concentrations	0.17 ppb	0.34 ppb
Number of times monitoring investigation level exceeded*	0	0

* must be evaluated as ‘not demonstrated’ if no monitoring or assessment has taken place

Table 2: Monitoring results—benzo[α]pyrene as a marker for polycyclic aromatic hydrocarbons

	Turrella
Air toxic	benzo[α]pyrene
Monitoring method	USEPA TO-13
Period of monitoring	2/10/08 to 27/9/09
Number of valid results	16
Maximum 24-hour average concentration	0.40
Annual average concentration (as arithmetic mean)	0.21
Arithmetic Standard Deviation of 24-hour average concentrations	0.10
Number of times monitoring investigation level exceeded*	0

* must be evaluated as ‘not demonstrated’ if no monitoring or assessment has taken place

Table 3: Monitoring results—formaldehyde

	Rozelle	Turrella
Air toxic	formaldehyde	formaldehyde
Monitoring method	USEPA TO-11	USEPA TO-11
Period of monitoring	2/10/08 to 27/9/09	2/10/08 to 27/9/09
Number of valid results	50	53
Maximum 24-hour average concentration	3.2 ppb	4.4 ppb
Annual average concentration (as arithmetic mean)	1.6 ppb	1.6 ppb
Arithmetic standard deviation of 24-hour average concentrations	0.65 ppb	0.66 ppb
Number of times monitoring investigation level exceeded*	0	0

* must be evaluated as ‘not demonstrated’ if no monitoring or assessment has taken place

Table 4: Monitoring results—toluene

	Rozelle	Turrella
Air toxic	toluene	toluene
Monitoring method	USEPA TO-15	USEPA TO-15
Period of monitoring	2/10/08 to 8/10/09	2/10/08 to 29/9/09
Number of valid results	54	53
Maximum 24-hour average concentration	3.8 ppb	6.4 ppb
Annual average concentration (as arithmetic mean)	0.9 ppb	1.8 ppb
Arithmetic standard deviation of 24-hour average concentrations	0.69 ppb	1.35 ppb
Number of times monitoring investigation level exceeded*	0	0

* must be evaluated as 'not demonstrated' if no monitoring or assessment has taken place

Table 5: Monitoring Results – xylenes (as total of ortho, meta and para isomers)

	Rozelle	Turrella
Air toxic	xylenes	xylenes
Monitoring method	USEPA TO-15	USEPA TO-15
Period of monitoring	2/10/08 to 8/10/09	2/10/08 to 29/9/09
Number of valid results	26	30
Maximum 24-hour average concentration	2.60 ppb	4.90 ppb
Annual average concentration (as arithmetic mean)	0.73 ppb	1.2 ppb
Arithmetic standard deviation of 24-hour average concentrations	0.53 ppb	0.95 ppb
Number of times monitoring investigation level exceeded*	0	0

* must be evaluated as 'not demonstrated' if no monitoring or assessment has taken place

Victoria

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for Victoria by the Hon Lily D'Ambrosio, Minister for Energy, Environment and Climate Change for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

In Victoria, the NEPM is implemented by the state Environment Protection Policy (Air Quality Management), subordinate legislation made under the *Environment Protection Act 1970*.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Since 2003, no air toxics monitoring done in Victoria has measured levels exceeding the monitoring investigation levels (air quality objectives) in the NEPM.

Identification of sites

- During 2016, no suitable sites were identified as being potential stage 1 and stage 2 sites for air toxics monitoring in Victoria.

Reporting of monitoring of air toxics

- During 2016, no monitoring was carried out for air toxics.

Reporting on assessment and action if any planned or taken to manage air toxics

- As noted above, there has been no monitoring in Victoria that has measured levels of air toxics exceeding the monitoring investigation levels. Therefore, there has been no additional action taken to manage air toxics beyond existing programs.

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for Queensland by Hon Steven Miles MP, Minister for Environment and Heritage Protection and Minister for National Parks and the Great Barrier Reef for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- In Queensland, the Air Toxics NEPM (AT NEPM) is implemented under the *Environmental Protection Act 1994* (EP Act), the Environmental Protection Regulation 2008, and the Environmental Protection (Air) Policy 2008, with the NEPM monitoring investigation levels incorporated as air quality objectives.
- In the 2016–17 reporting period monitoring of polycyclic aromatic hydrocarbons (including benzo[α]pyrene) continued at the Stage 2 Woolloongabba roadside monitoring site between January and May 2016, and commenced at Fisherman's Landing, an industrial area north of Gladstone, in March 2016.
- The Department continued to monitor benzene, toluene, xylenes and formaldehyde using open path DOAS instrumentation at Springwood in South East Queensland and in central Gladstone in the 2016–17 reporting period.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The Air Toxics NEPM has resulted in the evaluation of emission sources posing the greatest potential for significant population exposure to air toxics (concluded to be motor vehicles and industrial facilities), and locations where significant population exposure to elevated ambient concentrations of air toxics are most likely to occur.

The Queensland Government has a long-running program monitoring levels of benzene, toluene, xylenes and formaldehyde using an alternative differential optical absorption spectroscopy (DOAS) technique at its ambient air quality monitoring network sites of Springwood in south east Queensland and central Gladstone. Although the DOAS monitoring methodology is not in accordance with the protocols set out in the AT NEPM and the monitoring sites are not identified as Stage 2 sites, the data collected improves the Department's knowledge of ambient concentrations of most toxic pollutants in Schedule 1 of the AT NEPM.

Monitoring of air toxics is also carried out on occasions as part of specific studies into localised air quality to address community concerns. In such situations, the AT NEPM monitoring investigation levels provide a defensible benchmark for assessing measured concentrations.

Identification of sites

The Stage 1 and Stage 2 sites analysis identified roadside and industrial locations considered to have the greatest potential for significant population exposure to air toxics.

Reporting of monitoring of air toxics

Air toxics monitored in the 2016–17 reporting period included polycyclic aromatic hydrocarbons (including benzo[α]pyrene) at the Stage 2 roadside monitoring site at Woolloongabba in South East Queensland until May 2016; and at Fisherman's Landing, an industrial area north of Gladstone, from March 2016. Ambient monitoring of benzene, toluene, xylenes and formaldehyde using DOAS instrumentation continued at Springwood in South East Queensland and central Gladstone.

Benzo[α]pyrene monitoring at Woolloongabba between July 2013 and May 2016 has shown that 12month average roadside concentrations were consistently less than 12 per cent of the AT NEPM annual average monitoring investigation level of 0.3 ng/m³.

Monitoring results from these monitoring sites for the 2016 calendar year are provided in Tables 2 to 6 below. These results indicate that levels of air toxics are well below the AT NEPM investigation levels.

Table 1: Monitoring results—benzene

	Springwood	Central Gladstone
Air toxic	benzene	benzene
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/16 to 31/12/16	1/1/16 to 31/12/16
Number of valid results	136	341
Maximum 24-hour average concentration	0.0017 ppm	0.0017 ppm
Annual average concentration (as arithmetic mean)	0.0009 ppm	0.0010 ppm
Arithmetic standard deviation of 24-hour average concentrations	0.0002 ppm	0.0002 ppm
Number of times monitoring investigation level exceeded	0	0

Table 2: Monitoring results—toluene

	Springwood	Central Gladstone
Air toxic	toluene	toluene
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/16 to 31/12/16	1/1/16 to 31/12/16
Number of valid results	287	345
Maximum 24-hour average concentration	0.0113 ppm	0.0029 ppm
Annual average concentration (as arithmetic mean)	0.0042 ppm	0.0012 ppm
Arithmetic standard deviation of 24-hour average concentrations	0.0019 ppm	0.0003 ppm
Number of times monitoring investigation level exceeded	0	0

Table 3: Monitoring results—xylenes

	Springwood	Central Gladstone
Air toxic	xylenes	xylenes
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/16 to 31/12/16	1/1/16 to 31/12/16
Number of valid results	287	344
Maximum 24-hour average concentration	0.0149 ppm	0.0197 ppm
Annual average concentration (as arithmetic mean)	0.0087 ppm	0.076 ppm
Arithmetic standard deviation of 24-hour average concentrations	0.0022 ppm	0.0021 ppm
Number of times monitoring investigation level exceeded	0	0

Table 4: Monitoring results—formaldehyde

	Springwood	Central Gladstone
Air toxic	formaldehyde	formaldehyde
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/16 to 31/12/16	1/1/16 to 31/12/16
Number of valid results	315	347
Maximum 24-hour average concentration	0.0131 ppm	0.0035 ppm
Annual average concentration (as arithmetic mean)	0.0068 ppm	0.0021 ppm
Arithmetic standard deviation of 24-hour average concentrations	0.0026 ppm	0.0004 ppm
Number of times monitoring investigation level exceeded	0	0

Table 5: Monitoring results—benzo[*a*]pyrene

	Woolloongabba	Fisherman's Landing
Air toxic	benzo[<i>a</i>]pyrene	benzo[<i>a</i>]pyrene
Monitoring method	TO-13A	TO-13A
Period of monitoring	1/1/16 to 31/05/16	15/3/16 to 21/12/16
Number of valid results	5	9
Maximum monthly average concentration [‡]	0.051 ng/m ³	0.012 ng/m ³
Annual average concentration (as arithmetic mean) [‡]	0.028 ng/m ³ ^α	0.005 ng/m ³
Arithmetic standard deviation of monthly average concentrations ^α	0.016 ng/m ³	0.003 ng/m ³
Number of times monitoring investigation level exceeded	0	0

[‡] monthly, rather than 24-hour, sampling was conducted
^α 12-month period from June 2015 to May 2016

Reporting on assessment and action if any planned or taken to manage air toxics

From the monitoring results for the 2016–17 reporting period, together with past results, there is no evidence that the AT NEPM monitoring investigation levels would be exceeded in ambient air in Queensland. No specific management actions to reduce air toxics concentrations have been implemented.

Repeat identification of Stage 1 and Stage 2 sites

As monitoring to date has shown compliance with the monitoring investigation levels, no repeat identification of Stage 1 and Stage 2 sites is currently planned.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for Western Australia by the Hon Albert Jacob, MLA Minister for Environment; Heritage (21 March 2013 to 16 March 2017) and the Hon Stephen Dawson, Minister for Environment; Disability Services (17 March 2017 to 30 June 2017) for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

On 1 July 2017, the Western Australian Department of Environment Regulation was amalgamated with two other departments: Department of Water and the Office of the Environmental Protection Authority and was renamed the Department of Water and Environmental Regulation.

Legislative, regulatory and administrative framework

In Western Australia, the National Environment Protection (Air Toxics) Measure (Air Toxics NEPM) is implemented by the Department of Water and Environmental Regulation under the *National Environment Protection Council (WA) Act 1996* and the *Environmental Protection Act 1986*.

Air toxics emissions are also managed through the Perth Air Quality Management Plan, a non-statutory mechanism established by the Western Australian Government. The objective of the air quality management plan is to ensure that clean air is achieved and maintained throughout the Perth metropolitan region. The management plan identifies that, to achieve an overall improvement in Perth's air quality, further studies are required to determine major sources and concentrations of air toxics in the Perth metropolitan region. The initiatives within the air quality management plan are complementary to the Air Toxics NEPM.

Implementation issues arising

The Department of Water and Environmental Regulation has acquired a Remote Air Pollution Infrared Detector (RAPID) which is undergoing field trials in the Perth metropolitan region to determine its suitability for air quality investigations. The RAPID provides the capability of detecting over 80 air pollutants through the use of an infrared detector at a distance of up to 5 km. The unit has a sensor which rotates through 360 degrees and scans the air to detect air pollutants including air toxics such as benzene and toluene. The system uses a Fourier transform infrared method similar to the Open Path Infrared (OP-FTIR) Spectrometer successfully used by the Department of Water and Environmental Regulation for recent air quality studies in Midland and Kwinana.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MATTER EFFECTIVENESS

The Air Toxics NEPM has been effective in highlighting the need to investigate air toxics concentrations and providing monitoring investigation levels to which the results can be compared. The monitoring investigation levels provide a nationally consistent benchmark for assessing and comparing the concentrations of ambient air toxics from diverse monitoring sites and are an effective tool to inform government policy and programs on appropriate abatement actions.

Monitoring for air toxics in Western Australia has primarily been undertaken as part of specific studies. This has meant there are often a number of objectives to be satisfied when developing and implementing the monitoring programs. As a consequence, the NEPM monitoring protocol has not always been followed. However, the monitoring results from these studies are invaluable when assessing ambient air toxic concentrations across Western Australia.

An updated emissions inventory is currently being developed for the Perth metropolitan region. This inventory will include air toxics and will provide additional information in identifying and prioritising air toxic sources in this area.

Reporting of monitoring of air toxics

The results of NEPM-compliant monitoring as well as the additional complementary air quality studies in 2007–08 and 2009 indicated that air toxics levels in Perth are low compared to international standards and below NEPM monitoring investigation levels. These studies have been summarised and published in the *Background Air Quality Monitoring in Kwinana 2005–10* technical report, which is available on the Department of Water and Environmental Regulation website www.dwer.wa.gov.au. Owing to these findings, no additional NEPM-compliant monitoring has been undertaken during the past 12 months.

Reporting on assessment and action if any planned or taken to manage air toxics

Past monitoring has indicated that levels of air toxics are below monitoring investigation levels and no further action is currently planned.

Repeat identification of Stage 1 and Stage 2 sites

No repeat identification of Stage 1 and Stage 2 sites is currently planned. The initial desktop analysis identified 13 Stage 1 sites for formaldehyde, of which three met the ranking criteria for polycyclic aromatic hydrocarbons Stage 1 sites. No Stage 1 sites were identified for benzene, toluene or xylene. Two priority categories (traffic volume and wood heater density) were used to identify two Stage 2 sites. The results of the air toxics monitoring at these two Stage 2 sites showed that the annual average concentrations for formaldehyde and benzo[α]pyrene were below NEPM monitoring investigation levels. As these two sites are representative of the Stage 1 sites initially identified, repeat identification of Stage 1 and Stage 2 sites is not needed at this time.

South Australia

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for South Australia by the Hon Ian Hunter MLC, Minister for Sustainability, Environment and Conservation, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The NEPM operates as an Environment Protection Policy under the *Environment Protection Act 1993*.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

As monitoring in other jurisdictions has shown, air toxics in Australia are well below monitoring investigation levels. South Australia has not engaged in any specific monitoring of air toxics during the reporting period.

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for Tasmania by the Hon Elise Archer MP, Minister for Environment and Parks for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- In Tasmania the enabling legislation for the National Environment Protection (Air Toxics) Measure (Air Toxics NEPM) process is the *Environmental Management and Pollution Control Act 1994*. The process is implemented primarily through EPA Tasmania of the Department of Primary Industries, Parks, Water and the Environment.
- National environment protection measures are adopted as state policies under the *State Policies and Projects Act 1993*, and the Air Toxics NEPM is put into effect under the Environment Protection Policy (Air Quality) 2004 (Air Policy) and the Tasmanian Air Quality Strategy 2006.
- Tasmania has undertaken extensive preliminary screening monitoring of air toxics in Tasmania between 2008 and 2011. The results suggested that none of the air toxics measured at any of the Tasmanian sites is likely to exceed the investigation levels set in the NEPM. As a result, there has been no significant work undertaken against this NEPM since the analysis that was reported in 2011.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The monitoring conducted to date has improved the information base available in relation to ambient concentrations of air toxics in Tasmania.

Identification of sites

In 2005, 14 Stage 2 sites were identified in a desktop analysis conducted in accord with the Air Toxics NEPM Desktop Analysis Protocol.

Monitoring was conducted at nine of these sites in the period 2008 to 2011. Some of the sites monitored were considered representative of other identified sites, in terms of land use (e.g. residential), proximity to traffic and geography. This has allowed an indicative evaluation of some unmonitored sites.

Monitoring was also undertaken at selected sites to determine concentrations of air toxics in areas affected by:

- domestic wood smoke emissions
- motor vehicle emissions, in Hobart
- industrial emissions.

The results of the last air toxics monitoring program undertaken during the 2011 calendar year were reported in the 2011–12 annual implementation report.

Reporting of monitoring of air toxics

Air toxics monitoring undertaken to date in Tasmania was conducted predominantly using non-reference passive sampling techniques. Passive sampling allows for the possibility of longer sampling periods. As the levels of air toxic pollutants are likely to be low in Tasmania, the extended deployment period associated with passive samplers increased the likelihood of detection of these species.

The results of active sampling for PAH at two sites was reported in 2011. A program of active sampling at peak sites, for benzene, toluene, xylenes and formaldehyde was completed in 2011 and the results were included in the 2011–12 annual implementation report.

No air toxics monitoring was conducted in Tasmania during the 2016–17 period, see Part 1. Consequently, the monitoring requirements for the Air Toxics NEPM must be evaluated as ‘not demonstrated’ for the 2016 calendar year.

Reporting on assessment and action if any planned or taken to manage air toxics

There is no evidence to indicate that Air Toxics NEPM Monitoring Investigation Levels would be exceeded at any of the sites monitored in Tasmania in previous years. No action to specifically reduce concentrations of air toxics has been taken.

Repeat identification of Stage 1 and Stage 2 sites

The NEPM sets out a two-stage process for selecting sites for monitoring. This involves firstly a desktop assessment to identify ‘Stage 1’ sites—that is, sites at which significantly elevated levels of one or more of the air toxics are expected to occur. Secondly, a further desktop assessment is undertaken to identify ‘Stage 2’ sites—that is, those Stage 1 sites that are judged to be a priority for monitoring on the basis of a rapid assessment of the likelihood of significant population exposure to one or more air toxic.

In 2005, 14 Stage 2 sites were identified in a desktop analysis conducted in accord with the Air Toxics NEPM Desktop Analysis Protocol.

Repeat identification of Stage 1 and Stage 2 sites has not been conducted.

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for Australian Capital Territory by Mr Mick Gentleman, MLA for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

No implementation issues have arisen during the reporting year.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The ACT Government has previously undertaken a desktop analysis which showed that air toxics are not an issue for the ACT air shed.

Northern Territory

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for the Northern Territory by the Hon Lauren Moss MLA, Minister for Environment and Natural Resources for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- The Northern Territory Environment Protection Authority is responsible for implementation of the NEPM in the Northern Territory through the provisions of the *Waste Management and Pollution Control Act* and the *National Environment Protection Council (Northern Territory) Act 2004*.
- The Northern Territory undertook a desktop study in 2005 to identify Stage 1 and Stage 2 sites for the purposes of meeting obligations under the NEPM. No Stage 2 sites were identified and a long-term monitoring program has not been implemented.
- A nine month monitoring program was completed in February 2006 to establish baseline conditions for Darwin. The results indicated that there are very low concentrations of benzene, toluene and xylenes (ortho, meta and para), well below the investigation levels set by the NEPM.
- No further implementation activities were conducted in 2016–17.
- Reassessment of Stage 1 and Stage 2 sites may be required in the future, taking into account industrial development in the Darwin region. According to NEPM guidance, reassessment was required by 2009 but the previous studies indicate that concentrations of air toxics are at very low levels, well below the monitoring investigation levels of the NEPM.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The NEPM has provided the impetus and methodology for identifying sites most at risk of air toxics in the Northern Territory. Monitoring in 2005–06 has provided baseline data for further consideration.

In the year 2016–17 no sites were evaluated or selected and no analyses were performed.

Appendix 2: Jurisdictional reports on the implementation and effectiveness of the Ambient Air Quality National Environment Protection Measure

Commonwealth

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for the Commonwealth by the Hon Josh Frydenberg MP, Minister for the Environment and Energy, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- The Commonwealth implements the National Environment Protection (Ambient Air Quality) Measure (Ambient Air Quality NEPM) administratively and ensures that its obligations under the National Environment Protection Council Act 1994 are met.
- The Commonwealth is not required to undertake any direct monitoring as there are currently no nonself governing Commonwealth territories or Commonwealth regions with a population above the 25,000 Ambient Air Quality NEPM protocol threshold. The Commonwealth's monitoring plan is available from www.environment.gov.au/atmosphere/airquality/publications/cmp.html.
- At their meeting on 15 December 2015, Australia's environment ministers established the National Clean Air Agreement. The Agreement will deliver actions to reduce air pollution and establishes a process for jurisdictions to work cooperatively to address emerging air quality issues—ensuring Australians continue to enjoy clean air into the future.
- Taking into account the latest scientific evidence of health impacts, and as a key initial action under the Agreement, ministers agreed to strengthen national ambient air quality reporting standards for airborne fine particles. Ministers agreed to adopt reporting standards for annual average and 24-hour $\text{PM}_{2.5}$ particles of $8\mu\text{g}/\text{m}^3$ and $25\mu\text{g}/\text{m}^3$ respectively, aiming to move to $7\mu\text{g}/\text{m}^3$ and $20\mu\text{g}/\text{m}^3$ respectively by 2025. Ministers also agreed to establish an annual average standard for PM_{10} particles of $25\mu\text{g}/\text{m}^3$. These amendments came into effect in March 2016. Progress of the states and territories in adopting the new standards was reflected in the Agreement's mid-term review report, released in November 2016 and available at: www.environment.gov.au/protection/air-quality/publications/national-clean-air-agreement-mid-term-review-report.
- Further work, being led by Victoria, to review the ambient air quality standards for ozone, nitrogen dioxide and sulfur dioxide is underway under the National Clean Air Agreement. This review will consider new evidence on the health effects of air pollution, and ministers will consider this work following further consultation and development.
- In 2016–17, the Commonwealth in collaboration with the states and territories continued to progress work to reduce emissions from nationally significant sources. One Commonwealth-led initiative and a key action under the Agreement has focused on introducing emissions standards for non-road spark ignition engines and equipment, such as petrol-powered outdoor power equipment and marine outboard engines. These products emit high levels of PM_{10} , nitrogen dioxide and chemicals that lead to ozone formation. These new emissions standards are expected to be in place by end 2017, with phase-in timeframes for commencement to allow industry to transition to the new standards.
- On 31 October 2015, the Australian Government announced a whole of government review of vehicle emissions through the establishment of a Ministerial Forum on Vehicle Emissions. Government decisions on new vehicle emissions measures are expected in 2017–18. The Ministerial Forum is looking at:
 - introducing light vehicle fuel efficiency standards to reduce CO_2 emissions
 - moving from the Euro 5/V standard to Euro 6/VI to reduce noxious emissions from light/heavy vehicles
 - improving the fuel quality standards to reduce noxious emissions, ensure engine operability and facilitate better engine technology
 - other measures, including consumer information programs, Australian Government fleet purchasing, testing standards, and initiatives to support the adoption of alternative fuels, electric vehicles and intelligent transport systems.

- The Commonwealth monitors fuel quality at all stages of the fuel supply chain to ensure it complies with the *Fuel Quality Standards Act 2000* (the Act). The objects of the Act are to:
 - a) regulate the quality of fuel supplied in Australia in order to:
 - i. reduce the level of pollutants and emissions arising from the use of fuel that may cause environmental and health problems
 - ii. facilitate the adoption of better engine technology and emission control technology
 - iii. allow the more effective operation of engines
 - b) ensure that, where appropriate, information about fuel is provided when the fuel is supplied.
- In 2016–17, authorised fuel inspectors visited 436 sites and tested 1204 samples for compliance with the Act. The Department identified 34 instances of non-compliance with the Act. The Department engaged with stakeholders following these instances to encourage voluntary compliance with the Act. Ongoing non-compliance from one supplier resulted in the Department issuing an infringement notice for the supply of non-compliant fuel.
- A statutory review of the *Fuel Quality Standards Act 2000* was completed in April 2016. The review sought to determine the efficiency, effectiveness and appropriateness of the Act in achieving its objects, and advise on options for improvement. It found that the Act has met its objectives, and recommended that the Act be retained, with amendments. The review report is available at www.environment.gov.au/protection/fuel-quality/legislation/review-2015. The Department is currently undertaking a review of the legislative instruments (including fuel standards) made under the Act.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The Ambient Air Quality NEPM provides a nationally consistent framework for the monitoring, reporting and assessment of ambient air quality in Australia.

A review of the Ambient Air Quality NEPM, completed in May 2011, found that it lead to a greater understanding of air quality in Australia which resulted in an improved understanding of the health impacts of air pollution on the community. The review made 23 recommendations for changes to help minimise risk to population health from air pollution. Some of these recommendations were addressed through the amendment of the NEPM in 2016 and others are being considered in as part of the review of sulfur dioxide, nitrogen dioxide and ozone reporting standards.

The data collected by participating jurisdictions for the six criteria pollutants listed in the Ambient Air Quality NEPM (carbon monoxide (CO), nitrogen dioxide (NO₂), photochemical oxidants as ozone (O₃), sulfur dioxide (SO₂), lead (Pb) and PM₁₀) remain essential for monitoring Australia's ambient air quality. This is a valuable resource for informing actions under the National Clean Air Agreement and its work plan, and for developing strategic approaches to manage Australia's air quality into the future.

Data collected through the Ambient Air Quality NEPM has previously informed significant reports including the *State of the Air in Australia 1998–2008* report and the 2011 and 2016 Australia: State of the Environment reports.

New South Wales

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for New South Wales by the Hon Gabrielle Upton, Minister for the Environment, Minister for Local Government, and Minister for Heritage for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The National Environment Protection (Ambient Air Quality) Measure (NEPM) is implemented under the *Protection of the Environment Operations Act 1997*, the Protection of the Environment Operations (Clean Air) Regulation 2010 and the Protection of the Environment Operations (General) Regulation 2009.

The *Protection of the Environment Operations Act 1997* sets the statutory framework for managing air quality in NSW.

The Protection of the Environment Operations (Clean Air) Regulation 2010 provides measures to control emissions from industry, motor vehicles and fuels, domestic solid fuel heaters and open burning.

The Protection of the Environment Operations (General) Regulation 2009 establishes the licensing scheme for major industrial premises and economic incentives for licensed businesses and industry to reduce pollution, including emissions to air.

In NSW, the Office of Environment and Heritage and the Environment Protection Authority (EPA) work together to reduce the impacts of air pollution. The Office of Environment and Heritage operates a comprehensive air quality monitoring network and undertakes air quality forecasting to provide timely information so that people can take steps to reduce their risk of exposure. The EPA develops and implements regulation, policies and programs to improve compliance with NEPM goals and protect public health.

The NEPM goal is a driver for these strategies and a benchmark against which progress in managing air quality can be assessed.

Air quality management in the Greater Metropolitan Region and regional NSW

The EPA delivers numerous actions that target the pollutants of most concern in NSW, namely particles in the Greater Metropolitan Region and some regional centres, and ground-level ozone by targeting precursor emissions. These actions are designed to improve knowledge about air emissions, air quality and the impacts of air pollution, inform and engage the community and other stakeholders, and reduce air quality impacts from industry, vehicles and commercial and domestic activities.

The Office of Environment and Heritage operates the NSW Air Quality Monitoring Network, which includes 43 monitoring stations across several networks. Air quality data and information are made publicly available on the Office of Environment and Heritage website, updated on an hourly basis, and subscribers are sent automated text messages when air quality is measured or forecast to exceed national air quality standards. The Office of Environment and Heritage also collaborates with the EPA, other agencies and science partners to deliver research to inform air policies and programs.

The following is an outline of the key mechanisms for managing air quality and the activities implemented in 2016–17.

Clean Air for New South Wales Strategy

In 2016–17 NSW conducted public consultation on the development of a 10-year Clean Air for NSW Strategy. A Clean Air for NSW Consultation Paper was released for public comment from October 2016 to January 2017. One hundred and thirty three separate stakeholder submissions and over 1100 campaign emails were received. Public submissions are on the Environment Protection Agency's website.

A stakeholder Clean Air Summit, attended by over 300 people, was held in June 2017. Background papers and presentations from the summit are also on the EPA's website. Public input on the consultation paper and outcomes of the summit are informing the final Clean Air for NSW Strategy.

Air Emissions Inventory

The Air Emissions Inventory for the NSW Greater Metropolitan Region is a detailed snapshot of major sources of air pollution. It lists hundreds of different substances released to the atmosphere from natural and human-made sources within the Greater Metropolitan Region and has been updated every five years. The latest inventory is for the 2008 calendar year. Detailed inventory data is available in a series of technical reports.

Compilation of an updated Inventory for the 2013 calendar year continued through 2016–17, with updated results becoming available to inform air quality management projects from late 2017.

Community members can access air emissions inventory information about local sources of air pollution using the Air emissions in my community web tool. The tool presents aggregated data and charts for different geographic areas down to local council and postcode level.

Air quality monitoring

Fine particle monitoring was extended across the NSW Air Quality Monitoring Network in 2016–17. This monitoring supports air quality and health analysis and compliance assessments against national PM_{2.5} standards.

Air incident monitoring and modelling capabilities were established for incidents where air quality impacts may be experienced by the community for a period of several days or longer. This included two portable monitoring pods equipped with seven compliance air quality monitors that meet Australian Standards and the National Environment Protection Measure for ambient air quality and other non-compliance instruments and meteorological monitors. The pods are fitted with telemetry and communications systems coupled with web reporting capabilities for rapid transfer of information to a publicly accessible website. Preliminary testing using the pods was carried out.

Air emissions and health impacts research

Wood heater and power station emissions in the Greater Metropolitan Region

In 2016–17, the NSW EPA and the NSW Ministry of Health continued to support health research commissioned under a Memorandum of Understanding with the Independent Centre for Air Quality and Health Research and Evaluation. The Centre for Air Quality and Health Research and Evaluation undertook comprehensive research and modelling to estimate the health impacts of PM_{2.5} related wood heater and power station emissions in the NSW Greater Metropolitan Region. Publication of the final report is expected in late 2017.

Sydney Particle Characterisation Study

In June 2017, the EPA released findings of the Sydney Particle Characterisation Study. This study, on airborne PM_{2.5} samples collected by Australian Nuclear Science and Technology Organisation researchers at four sites in Sydney from 2000 to 2014, is the longest particle characterisation study published anywhere in the world to date. The study identified four main human-made pollution source factors:

- smoke, mainly from domestic wood heaters
- secondary sulfates from fossil fuel burning e.g. from coal fired power stations, industry and vehicles
- industrial sources
- motor vehicles.

The EPA will use the results of the study to support evidence based decision making on actions to improve air quality in the Sydney region.

Fugitive Methane Emissions Study

The EPA commissioned the CSIRO to undertake a wide-ranging study of fugitive methane emissions from some of the major land uses across NSW. Methane is a gas that exists naturally and is also generated by human activity. Sources of methane emissions in the environment include wetlands, native forests, landfills, rice farms, coal mines, coal seam gas sites, sewage treatment plants and intensive agricultural sites.

To examine the levels of methane from the various land uses in NSW, the CSIRO measured atmospheric methane levels at 16 sites across the state from June 2014 to May 2016. These included coal seam gas, landfill, agricultural, coal mining, wastewater treatment and a forest and a wetland site. The report [*Methane and Volatile Organic Compound Emissions*](#) in New South Wales was published by the EPA in April 2017.

Broken Hill Environmental Lead Study

The Broken Hill Environmental Lead Study was commissioned by the EPA to inform remediation efforts underway as part of the Broken Hill Environmental Lead Program to address lead contamination and exposures. This collaborative study, by the EPA, the Office of Environment and Heritage and Macquarie University, aims to monitor airborne and deposited lead and assess contributions of current emissions from 'Line of Lode' mining leases and emissions from areas affected by historic emissions ('legacy lead').

Sydney Air Quality Study

This multi-year study commenced in 2016 to improve the understanding of air quality and the impacts of air pollution in the greater Sydney region. The study will extend the evidence base for air policies and programs, providing information on past, current and future air quality and its impacts on public health and the environment in the greater Sydney region.

The study will support evidence-based air policies and programs by identifying persistent and emerging issues, and highlighting opportunities to improve air quality and realise public health and economic benefits.

Enhancing Air Quality Forecasting in NSW

This program was established to progressively expand the scope and enhance the accuracy of air quality forecasting capabilities in NSW. The Office of Environment and Heritage issues a daily air quality forecast for the greater Sydney region, and the overall accuracy of forecasts is currently considered to be moderate. Through this program the Office of Environment and Heritage will work towards more accurately forecasting air quality for greater Sydney and its sub-regions, and will progressively expand forecasting to the whole of the NSW greater metropolitan region and major regional areas. The program involves several projects to develop specific advanced tools and capabilities, some involving collaboration with science partners.

Industry emissions

In 2016–17, the EPA continued to implement its regulatory responsibilities, including licensing scheduled industry activities and conducting compliance and enforcement programs. The *Protection of the Environment Operations Act 1997*, the Protection of the Environment Operations (Clean Air) Regulation 2010 and the Protection of the Environment Operations (General) Regulation 2009 set the framework for managing air pollution from major industries in NSW.

The EPA's Load Based Licensing Scheme sets limits on the pollutant loads emitted by holders of environment protection licences and links licence fees to pollutant emissions, including for certain air pollutants. In 2016–17, the EPA continued to progress a review of the Load Based Licensing Scheme, which aims to improve the scheme's efficiency and effectiveness.

The EPA also updated the Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (2016) to include particle assessment criteria consistent with the revised National Environment Protection (Ambient Air Quality) Measure particle standards updated in February 2016.

Non-road diesel and marine emissions

The EPA's Diesel and marine emissions management strategy sets out NSW actions to address emissions from non-road diesel equipment, diesel locomotives operating in NSW and shipping.

- *Non-road diesel plant and equipment*

Based on recommendations from the EPA's NSW Coal Mining Benchmarking Study Best Practice Measures for Reducing Non-Road Diesel Exhaust Emissions, the EPA released a draft Pollution Reduction Study and draft Special Licence Condition for consultation with the coal mining industry in early 2017. The Pollution Reduction Strategy requires information from operating open-cut coal mines in NSW on the emission performance of the existing non-road diesel fleet, measures already applied that impact on emissions and fuel efficiency, and investigation of any further reasonable and feasible measures that could be implemented to reduce particle emissions. The draft Special Licence Condition requires new non-road diesel equipment commissioned at NSW coal mines from January 2019 to meet the US EPA Tier 4 final emission standard.

In 2016–17 the NSW Office of Environment and Heritage continued to administer the NSW Government Resource Efficiency Policy. The policy includes requirements to address non-road diesel engine emissions through government procurement and contracts.

- *Locomotives*

The Diesel Locomotive Fuel Efficiency and Emissions Study, completed in December 2016, established baseline exhaust emissions and fuel consumption of General Electric (GE) powered locomotives operating in NSW and compared their emissions against US Tier 0+ locomotive emission standards. This followed a 2015 project that evaluated the emissions and fuel baseline, and impacts of emission upgrade kits, for Electro-Motive Diesel locomotives. More than 90 per cent of locomotives operating in NSW use Electro-Motive Diesel and GE engines. The studies demonstrated that PM emission reductions conforming to US Tier 0+ emission standards can be achieved through emission upgrade kits or other locomotive upgrade programs. Results of these studies will inform policy development for management of emissions from locomotives operating in NSW.

- *Review of regulatory framework for the NSW operational rail sector*

Consultation was ongoing in 2016–17 for the review of regulatory framework for management of impacts from the NSW rail system activities. An assessment of options concluded that the most effective and practical approach to regulating environmental impacts from rail operations is to license both railway system operators and rolling stock operators, under the *Protection of the Environment Operations Act 1997*, for the activities under their respective control. This would make rolling stock operators directly accountable to the EPA for their environmental performance, including for emissions from diesel locomotives. This proposal is currently being considered by the NSW Government.

- *Shipping*

The Australian Government is now responsible for the regulation of fuel used for all ships, including cruise ships, in Sydney Harbour and regional NSW ports. The specifications for the fuel used by cruise ships in Sydney Harbour is no longer regulated under NSW legislation.

Following NSW Government and community representations, the Australian Government introduced requirements in December 2016 for cruise ships to use 0.1 per cent or less sulfur fuel at berth in Sydney Harbour.

Vehicle and fuel emissions

- *Smoky vehicle program*

The EPA operates a [smoky vehicle compliance program](#) that targets vehicles emitting excessive air impurities. In 2016–17, EPA officers issued 75 penalty notices to the owners of vehicles found to be emitting excessive air impurities. In addition, the EPA issued 957 letters to vehicle owners reported by members of the community, advising the vehicle owners to have the vehicles inspected and repaired if necessary.

- *Vapour recovery at service stations*

Vapour Recovery Stage 1 (VR1) captures displaced vapours from storage tanks when a tanker delivers fuel to a service station, while Vapour Recovery Stage 2 (VR2) captures vapours displaced at the bowser when a motorist refuels. The EPA has worked closely with industry stakeholders to implement vapour recovery requirements at petrol service stations across Sydney, Wollongong, central coast and Newcastle metropolitan areas of NSW.

From 31 January 2017, regulatory responsibility for vapour recovery transitioned from the EPA to local councils—to align with local councils being the existing Appropriate Regulatory Authority for service stations in NSW (under the *Protection of the Environment Operations Act 1997*). The EPA supported the transition by conducting vapour recovery capacity building workshops in early 2017, which were attended by 118 council officers representing 43 of the 44 councils within the vapour recovery zones. The EPA also published updated [Standards and Best Practice Guidelines for Vapour Recovery at Petrol Service Stations](#) to support the transition.

Approximately 98 per cent of petrol service stations required to have VR1 installed and operating are compliant, and 86 per cent of petrol service stations required to install VR2 technology have done so. The EPA will follow-up with appropriate regulatory actions for those service stations known to be vapour recovery non-compliant as of 30 June 2017. To date, the EPA's compliance actions have included more than 450 site inspections, 600 advisory letters, 48 formal warning letters, 87 show-cause letters and 3 penalty notices.

Once fully implemented, vapour recovery is expected to reduce volatile organic compounds emissions in the greater metropolitan region by approximately 5000 tonnes per year.

- *Summer low-volatility petrol*

To manage ozone formation in the Sydney region, regulatory requirements limit petrol volatility to 62 kilopascals (a measure of vapour pressure) over the summer period from 15 November to 15 March each year. Petrol importers and blenders must test and report to the EPA on batch volatility. The petrol volatility limits reduce volatile organic compounds emissions in the Sydney region by about 4000 tonnes each summer.

- *National vehicle and fuel standards*

In March 2017 the NSW Government made formal submissions responding to Australian Government consultations on Australian vehicle emission and fuels quality standards. The government's submissions supported adopting the latest and most health protective (Euro6/VI) emission standards for light and heavy duty vehicles, and low sulfur (10ppm) petrol to maximise environmental health benefits.

Wood smoke management

In 2016 the NSW Government adopted new national standards for wood heaters, which set lower emission limits and new efficiency limits for heaters sold in NSW.

In April–June 2017 the EPA undertook a domestic wood heater compliance audit program to assess the level of industry compliance with certification and labelling requirements, and improve manufacturers' and retailers' awareness and understanding of legislative requirements and relevant standards.

The EPA audited 30 businesses representing all major manufacturers, distributors and wholesalers in NSW. Audit results indicated that most wood heaters currently sold in NSW are certified as compliant with the new standards.

Based on social research in the Upper Hunter, in 2016–17 the EPA developed a new package of education materials to raise awareness about wood smoke impacts on human health and the environment, for trial in Singleton and Muswellbrook during winter 2017.

Hunter region air quality management

In 2016–17, the EPA continued its Dust Stop Program to reduce dust from coal mining activities. Throughout NSW, this program is estimated to have reduced PM₁₀ emissions from open-cut mines by 22,000 tonnes a year or 19 per cent.

In 2016–17 a supplementary study to the Lower Hunter Particle Characterisation Study was conducted to investigate the amount of coal present in particulate matter at Stockton, which is near coal loading facilities around the port of Newcastle. The CSIRO study, Quantifying the coal component of airborne particulate matter at Stockton, found that while coal makes up 12 per cent of total suspended particles, it accounts for less than 2 per cent of finer PM_{2.5} particles.

The EPA also continued to engage with Hunter stakeholders and community about air quality issues through the Newcastle Community Consultative Committee on the Environment and the Upper Hunter Air Quality Advisory Committee.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The NSW Air Quality Monitoring Program is the largest in Australia, with a comprehensive monitoring network operated by the Office of Environment and Heritage. The NEPM network is a sub-set of the entire Air Quality Monitoring Network operated by the Office of Environment and Heritage.

During 2016 NEPM standards were met for carbon monoxide, nitrogen dioxide and sulfur dioxide which all remain well below NEPM standards. Note that monitoring for lead as a regional pollutant ceased in NSW from January 2005 due to the extremely low concentrations of lead now found in ambient air. The Sydney Particle Characterisation Study confirmed the low levels of lead in ambient air.

During 2016 NEPM standards were not met for ozone and particles as PM₁₀ (10 microns and smaller in diameter) and as PM_{2.5} (2.5 microns and smaller in diameter). These exceedances are summarised below:

Ozone

During 2016, Liverpool, Prospect, St Mary's, Albion Park South, Kembla Grange and Wollongong exceeded the NEPM standard for ozone. The most extensive ozone event occurred between 24-25 February when temperatures reached 42.2°C at Penrith (*NSW Air Quality Statement 2016*). Photochemical activity (as ozone) typically occurs during the summer months (January, February, November and December).

Particles

To attain NEPM standards for particles as PM_{10} , no exceedance days of the 24-hour standard are allowed, unless identified as an exceptional event. During 2016, Oakdale, Kembla Grange, Wollongong, Albury, Tamworth and Wagga Wagga North did not attain the 24-hour NEPM standard. In 2016, extensive hazard reduction burning in May throughout the Sydney Greater Metropolitan Region and agricultural activities in Wagga Wagga, were the major influences on elevated PM_{10} levels throughout NSW. All monitoring sites met the NEPM PM_{10} annual average standard of $25.0 \mu\text{g}/\text{m}^3$.

To attain the NEPM standards for particles as $PM_{2.5}$, no exceedance days of the 24-hour standard are allowed, unless identified as an exceptional event. During 2016, the NEPM 24-hour standard was not met at Camden, Chullora, Earlwood, Liverpool, Richmond, Wollongong, Beresfield and Wallsend. All $PM_{2.5}$ exceedances were due to hazard reduction burns in May in the Sydney Greater Metropolitan Region and in November at Newcastle. Liverpool and Earlwood also exceeded the NEPM $PM_{2.5}$ annual average standard of $8 \mu\text{g}/\text{m}^3$.

The NEPM standards for ozone were met for most NEPM monitoring stations during 2016, including in Sydney. However, meeting the NEPM standards for ozone remains a challenge for Sydney in summer in most years, due to continuing pressures from increasing economic activity, motor vehicle use, urban expansion and emissions of volatile organic compounds (which are precursors of ozone) from sources such as paints, solvents, aerosols and small engines.

The particle goals (as PM_{10} and as $PM_{2.5}$) are influenced by hazard reduction burns in the Sydney Greater Metropolitan Region and mining and agricultural activities in rural areas. Solid fuel heaters also produce elevated levels of particles in autumn and winter in both urban and rural areas. Elevated particle levels can occur due to effects of emission sources combined with the local climate and topography (e.g. impacts of agricultural burning in Wagga Wagga north).

New South Wales programs targeting the primary emission sources of ozone and particle pollution are outlined in the previous section.

Data from NEPM monitoring stations are presented below to enable an evaluation of whether the NEPM standards and goals were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. For averaging times shorter than one year, NEPM standards and goals are met if:

- the standard for a pollutant is exceeded on no more than a specified number of days in a calendar year (one day per year for all pollutants except PM_{10} , and $PM_{2.5}$, for which no exceedance days are allowed.)
- at least 75 per cent of data are captured in each quarter of the year.

Hourly updated data from the total NSW Air Quality Monitoring Network are reported at www.environment.nsw.gov.au/AQMS/aqi.htm. Current and historical data is searchable and downloadable from www.environment.nsw.gov.au/AQMS/search.htm. The NSW Air Quality Monitoring Plan is located at www.environment.nsw.gov.au/air/nepm/index.htm.

CO

Carbon monoxide

(NEPM standard 8 hours=9.0 ppm)

Station	Number of exceedances	NEPM goal compliance
Sydney		
Camden	0	Met
Campbelltown West	0	Met
Chullora	0	Met
Liverpool	0	Met
Prospect	0	Met
Rozelle	0	Met
Central Coast		
Wyang	0	Met
Illawarra		
Wollongong	0	Met
Lower Hunter		
Newcastle	0	Met

During 2016 compliance with the Ambient Air Quality NEPM for carbon monoxide was demonstrated at all sites in the Sydney, Illawarra, Central Coast and Lower Hunter regions.



Nitrogen dioxide

(NEPM standard: 1 hour=0.12 ppm, 1 year=0.03 ppm)

Station	1 hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Sydney				
Bringelly	0	Met	0.005	Met
Camden	0	Met	0.004	Met
Campbelltown West	0	Met	0.010	Met
Chullora	0	Met	0.013	Met
Liverpool	0	Met	0.012	Met
Prospect	0	Met	0.010	Met
Richmond	0	Met	0.004	Met
Rozelle	0	Met	0.011	Met
Central Coast				
Wyong	0	Met	0.005	Met
Illawarra				
Albion Park South	0	Met	0.004	Met
Wollongong	0	Met	0.006	Met
Lower Hunter				
Newcastle	0	Met	0.008	Met
Wallsend	0	Met	0.007	Met

During 2016 compliance with the Ambient Air Quality NEPM for nitrogen dioxide was demonstrated at all sites in the Sydney, Illawarra, Central Coast and Lower Hunter regions.



Ozone

(NEPM standard: 1 hour=0.10 ppm, 4 hours=0.08 ppm)

Station	1 hour		4 hour	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Sydney				
Bringelly	0	Met	0	Met
Camden	0	Met	0	Met
Campbelltown West	0	Met	0	Met
Chullora	0	Met	0	Met
Liverpool	0	Met	2	Not met
Oakdale	0	Met	0	Met
Prospect	1	Met	0	Met
Richmond	0	Met	0	Met
Rozelle	0	Met	0	Met
St Marys	1	Met	1	Met
Central Coast				
Wyong	0	Met	0	Met
Illawarra				
Albion Park South	1	Met	2	Not met
Kembla Grange	1	Met	1	Met
Wollongong	0	Met	1	Met
Lower Hunter				
Newcastle	0	Met	0	Met
Wallsend	0	Met	0	Met

Ozone levels above the 1 hour and 4 hour standards were recorded in Sydney and the Illawarra during 2016. Photochemical activity (as ozone) typically occurs during the summer months (January, February, November and December). The most extensive ozone event occurred between February 24 and 25 where maximum temperatures reached 42.2°C at Penrith. (*NSW Air Quality Statement 2016*).

Ozone levels in the Central Coast and the Lower Hunter remained below the standards throughout 2016.



Sulfur dioxide

(NEPM standard: 1 hour=0.20 ppm, 1 day=0.08 ppm, 1 year=0.02 ppm)

Station	1 hour		1 day		1 year	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Sydney						
Bringelly	0	Met	0	Met	0.000	Met
Campbelltown West	0	Met	0	Met	0.000	Met
Chullora	0	Met	0	Met	0.001	Met
Prospect	0	Met	0	Met	0.001	Met
Richmond	0	Met	0	Met	0.000	Met
Central Coast						
Wyong	0	Met	0	Met	0.001	Met
Illawarra						
Albion Park South	0	Met	0	Met	0.001	Met
Wollongong	0	Met	0	Met	0.001	Met
Lower Hunter						
Newcastle	0	Met	0	Met	0.002	Met
Wallsend	0	Met	0	Met	0.001	Met

During 2016 compliance with the Ambient Air Quality NEPM for sulfur dioxide was demonstrated at all sites in the Sydney, Illawarra, Central Coast and Lower Hunter regions.

PM₁₀Particles as PM₁₀(NEPM standard 1 day=50 µg/m³, 1 year=25 µg/m³)

Station	1 day		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (25µg/m ³)	NEPM goal compliance
Sydney				
Bringelly	3	Met	16.9	Met
Camden	0	Met	14.4	Met
Campbelltown West	1	Met	16.1	Met
Chullora	1	Met	18.1	Met
Liverpool	3	Met	19.6	Met
Oakdale	5	Not met	12.2	Met
Prospect	4	Met	18.9	Met
Richmond	2	Met	16.0	Met
Rozelle	1	Met	16.8	Met
Central Coast				
Wyong	0	Met	15.2	Met
Illawarra				
Albion Park South	0	Met	14.9	Met
Kembla Grange	4	Not met	20.0	Met
Wollongong	2	Not met	17.3	Met
Lower Hunter				
Beresfield	0	Met	19.1	Met
Newcastle	1	Met	21.6	Met
Regional				
Albury	1	Not met	15.1	Met
Bathurst	0	Met	13.3	Met
Tamworth	1	Not met	15.3	Met
Wagga Wagga North	16	Not met	20.6	Met

In 2016, extensive hazard reduction burning in May throughout the Sydney Greater Metropolitan Region and agricultural activities in Wagga Wagga were the major influences on elevated PM₁₀ levels throughout NSW. This resulted in 14 monitoring stations exceeding the national 1 day standard of 50µg/m³. Oakdale, Kembla Grange, Wollongong, Albury, Tamworth and Wagga Wagga north did not comply with the NEPM goal of zero exceedances. All other exceedances were linked to exceptional events. All monitoring sites complied with the NEPM PM₁₀ annual average standard of 25.0 µg/m³.

PM_{2.5}

Particles as PM_{2.5}

(NEPM standard: 1 day=25 µg/m³, 1 year=8 µg/m³)

Station	1 day		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (8 µg/m ³)	NEPM goal compliance
Sydney				
Camden	3	Met	6.4	Met
Chullora	5	Met	8.0	Met
Earlwood	5	Met	8.1	Not met
Liverpool	4	Met	8.7	Not met
Richmond	6	Met	7.9	Met
Central Coast				
Wyong	0	Met	5.7	Met
Illawarra				
Wollongong	3	Met	7.4	Met
Lower Hunter				
Beresfield	1	Met	7.4	Met
Wallsend*	1	Met	8.0	ND*

* ND Not demonstrated, the station did not meet 75 per cent data availability criteria, as data during the first quarter of 2016 was invalidated due to instrument flow problems.

In 2016, extensive hazard reduction burns in May throughout the Sydney Greater Metropolitan Region and in November at Newcastle were the major influence on elevated PM_{2.5} levels throughout NSW. This resulted in eight monitoring stations exceeding the national 1 day standard of 25 µg/m³. All exceedances of PM_{2.5} were linked to hazard reduction burns. Liverpool and Earlwood did not comply with the NEPM PM_{2.5} annual average standard of 8.0 µg/m³.

Victoria

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Victoria by the Hon Lily D'Ambrosio, Minister for Energy, Environment and Climate Change for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- Monitoring was performed in accordance with a modified state monitoring plan, National Environment Protection (Ambient Air Quality) Measure (Ambient Air Quality NEPM) technical papers and EPA Victoria's National Association of Testing Authorities' accreditation.
- For CO and NO₂ data capture was high, with all stations above the data capture target of 75 per cent.
- For O₃ data capture was not met at six stations:
 - Levels at Brighton, Dandenong, Melton, Mooroolbark and Point Cook stations were below the target of 75 per cent as these instruments only operated during summer periods where peak ozone formation occurs.
 - At Footscray station data capture was below the target of 75 per cent due to an instrumentation fault.
- For SO₂ data capture was high at all stations except for Altona north station, which was below the target of 75 per cent due to an instrumentation fault.
- For PM₁₀ data capture was above 75 per cent at all stations, except for Richmond, which was decommissioned during the year. For Geelong south, performance against the standard was not met due to 5 exceedances of the daily standard due to localised dust.
- For PM_{2.5} data capture was above 75 per cent, except for Geelong south station which was below 75 per cent due to an instrumentation fault.
- There were no other significant implementation issues.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

- Victoria's air quality in 2016 was generally good, with some parameters shown to be improving over time. Monitoring in 2016 showed the AAQ NEPM goals and standards were met for carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃) and sulfur dioxide (SO₂). There were some exceedances for particles. In general, exceedances were attributed to local dust, fire or urban emissions.
- In response to the variation of the NEPM, PM_{2.5} is now monitored using equivalent beta attenuation monitors at Alphington, Footscray, Geelong South and Traralgon. This is in addition to the reference partisol monitors at Alphington and Footscray which continue to be operated. The performance of the beta attenuation method continues to be assessed by comparing data at Alphington and Footscray.
- There were five days when particles as PM₁₀ exceeded the daily standard at NEPM station at Geelong, these events are attributed to localised dust.
- There were four days when particles as PM_{2.5} exceeded the daily standard at NEPM stations at Alphington, Footscray and Traralgon. These were associated with bushfire smoke (Alphington and Footscray on 26 January 2016), planned fuel reduction activities (Traralgon on 20 April 2016) and two associated with domestic wood heaters (Alphington and Footscray 2 June 2016 and 3 June 2016).
- The results from issue-specific monitoring stations in Brooklyn and the Latrobe Valley are displayed on the EPA's website www.epa.vic.gov.au/our-work/monitoring-the-environment/epa-airwatch.

Data from relevant monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goals were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. For averaging times shorter than one year, compliance with the NEPM goal is achieved if the standard for a pollutant is exceeded on no more than a specified number of days in a calendar year (one day per year for all pollutants except PM₁₀, which may be exceeded no more than five days per year). At least 75 per cent of data must be captured in each quarter.

The data are presented in greater detail in EPA Publication 1663 (Air monitoring report 2016—Compliance with the National Environment Protection (Ambient Air Quality) Measure) www.epa.vic.gov.au/our-work/publications/publication/2017/september/1663.

The monitoring plan for Victoria is available from www.epa.vic.gov.au/our-work/publications/publication/2002/january/763.

CO Carbon monoxide

(NEPM standard: 8 hours=9.0 ppm)

Station	Number of exceedances	NEPM goal compliance
Alphington	0	Met
Footscray	0	Met
Geelong South	0	Met

NO₂ Nitrogen dioxide

(NEPM standard: 1 hour=0.12 ppm, 1 year=0.03 ppm)

Station	1 hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Alphington	0	Met	0.009	Met
Footscray	0	Met	0.010	Met
Geelong South	0	Met	0.006	Met
Traralgon	0	Met	0.007	Met



Ozone

(NEPM standard: 1 hour=0.10 ppm, 4 hours=0.08 ppm)

Station	1 hour		4 hours	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Alphington	0	Met	0	Met
Brighton	0*	ND	0*	ND
Dandenong	0*	ND	0*	ND
Footscray	0*	ND	0*	ND
Geelong South	0	Met	0	Met
Melton	0*	ND	0*	ND
Mooroolbark	0*	ND	0*	ND
Point Cook	0*	ND	0*	ND
Traralgon	0	Met	0	Met

* <75 per cent data capture during year, insufficient data to demonstrate compliance

ND Not demonstrated



Sulfur dioxide

(NEPM standard: 1 hour=0.20 ppm, 1 day=0.08 ppm, 1 year=0.02 ppm)

Station	1 hour		1 day		1 year	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Alphington	0	Met	0	Met	0.0004	Met
Altona North	0*	ND	0*	ND	0.0010*	ND
Geelong South	0	Met	0	Met	0.0010	Met
Traralgon	0	Met	0	Met	0.0010	Met

* <75 per cent data capture during year, insufficient data to demonstrate compliance

ND Not demonstrated

Pb**Lead**(NEPM standard: 1 year=0.50 $\mu\text{g}/\text{m}^3$)

Station	Annual average ($\mu\text{g}/\text{m}^3$)	NEPM goal compliance
NA	NA	NA

Following the phasing-out of leaded petrol, concentrations at the peak station, Collingwood, were below the level specified for discontinuing monitoring. Monitoring of lead in Melbourne ceased at the end of 2004. All other regions meet screening criteria as set out in the monitoring plan and all regions are assessed as complying with the standard and goal.

PM₁₀**Particles as PM₁₀**(NEPM standard: 1 day=50 $\mu\text{g}/\text{m}^3$)

Station	Number of exceedances	NEPM goal compliance
Alphington	0	Met
Dandenong	0	Met
Footscray	0	Met
Geelong South	5	Not met
Mooroolbark	0	Met
Richmond	0*	ND
Traralgon	0	Met

* <75 per cent data capture during year, insufficient data to demonstrate compliance

ND Not demonstrated

PM_{2.5}**Particles as PM_{2.5}**(NEPM standard: 1 day=25 $\mu\text{g}/\text{m}^3$, 1 year=8 $\mu\text{g}/\text{m}^3$)

Station	1 year		NEPM goal compliance
	Number of exceedances	Annual average (mg/m^3)	
Alphington	3	7.3	Not met
Footscray	3	6.9	Not met
Geelong	0*	5.5	ND
Traralgon	1**	7.8	Met

* <75 per cent data capture during year, insufficient data to demonstrate compliance

** Exceedance was attributed to jurisdiction authorised hazard reduction burning and is considered an exceptional event for the purpose of assessing compliance with the goal.

ND Not demonstrated

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Queensland by Hon Steven Miles MP, Minister for Environment and Heritage Protection and Minister for National Parks and the Great Barrier Reef for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- In Queensland, the Ambient Air Quality NEPM is implemented under the *Environmental Protection Act 1994* (EP Act), the Environmental Protection Regulation 2008, and the Environmental Protection (Air) Policy 2008, with the NEPM standards incorporated as air quality objectives.
- In the 2016–17 reporting period, monitoring was conducted in five of the ten regions identified in the Monitoring Plan: south-east Queensland, Gladstone, Mackay, Townsville and Mount Isa. Eleven of the nineteen sites nominated in the monitoring plan, and two additional reporting sites, were operational. Monitoring at four of the eight remaining sites concluded prior to 2016–17 due to completion of campaign monitoring or site closure following termination of the monitoring site lease by the property owner.
- Collection of PM_{2.5} data using Tapered Element Oscillating Microbalance instrumentation continued at two sites in south east Queensland (Rocklea and Springwood) and one site in Gladstone (south Gladstone) during 2016.
- The Woolloongabba monitoring site in south east Queensland was closed on 17 June 2016 due to construction works at the monitoring site location. The station was relocated to a new location on Ipswich Road approximately 100 m north of the original site and monitoring re-commenced on 6 June 2017.
- The Pimlico monitoring site in Townsville closed on 20 February 2016 due to planned redevelopment of the property. Work is underway to establish a replacement station in North Ward by the end of 2017.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

- The results of Queensland's ambient air quality monitoring in 2016 indicate that the goal of the Ambient Air Quality NEPM was met for all pollutants at all monitoring stations where there was sufficient data capture to assess compliance, except for sulfur dioxide in Mount Isa.
- Although industrial emission sources in Mount Isa have significantly reduced total sulfur dioxide emissions to air in recent years through capture and conversion to sulfuric acid and improved monitoring and process control feedback mechanisms, compliance with the NEPM one-hour and 24-hour sulfur dioxide standards was unlikely to be achieved under existing regulatory controls.
- In May 2008, the Queensland Government amended legislation regulating Mount Isa smelter emissions to bring these operations under the stricter controls within the Environmental Protection Act. In December 2011, the Queensland Government issued the smelter operator an Environmental Authority applying contemporary environmental conditions to the site. In April 2012, a Transitional Environmental Program under the provisions of the Environmental Protection Act was approved, recognising that the smelter operations could only achieve contemporary air quality standards following considerable investment and further work. The Transitional Environmental Program listed a staged program of works, including the closure of the copper smelter in 2016, designed to bring the site into compliance with Ambient Air Quality NEPM air quality standards by 2016.
- In September 2015 the Queensland Government issued the smelter operators with an amended Environmental Authority to allow operation of the copper smelter to continue until 2022. Consequently, the Transitional Environmental Program was cancelled in February 2016. While still progressively reducing emissions to air at the site, the amended Environmental Authority allows for one-hour average sulfur dioxide levels in excess of the Ambient Air Quality NEPM goal.
- The Ambient Air Quality NEPM PM₁₀ 24-hour standard (the numerical threshold) was exceeded on one day in 2016 at The Gap in Mount Isa due to a dust storm. However, PM₁₀ at The Gap complied with the NEPM goal in 2016 as, under the exceptional event rule, this exceedance is excluded from the determination of compliance with the NEPM goal.

Data from relevant monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goal were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. For averaging times shorter than one year, compliance with the NEPM goal is achieved if the standard for a pollutant is exceeded on no more than a specified number of days in a calendar year (one day per year for all pollutants except PM₁₀, which may be exceeded no more than five days per year) and at least 75 per cent of data are captured in each quarter.

The data are presented in greater detail in the Queensland 2016 air monitoring report available at www.qld.gov.au/environment/pollution/monitoring/air-reports.

The monitoring plan for Queensland is available from www.qld.gov.au/environment/pollution/monitoring/air-reports.

CO

Carbon monoxide

(NEPM standard: 8 hours=9.0 ppm)

Station	Number of exceedances	NEPM goal compliance
South-east Queensland		
Woolloongabba	0	ND*

* ND Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to temporary closure of the station

NO₂

Nitrogen dioxide

(NEPM standard: 1 hour=0.12 ppm, 1 year=0.03 ppm)

Station	1 hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
South-east Queensland				
Mountain Creek	0	Met	0.004	Met
Deception Bay	0	Met	0.005	Met
Rocklea	0	Met	0.007	Met
Springwood	0	Met	0.006	Met
Flinders View	0	Met	0.008	Met
Gladstone				
South Gladstone	0	Met	0.005	Met
Townsville				
Pimlico	0	ND*	Insufficient data	ND*

* ND Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to closure of the station



Ozone

(NEPM standard: 1 hour=0.10 ppm, 4 hours=0.08 ppm)

Station	1 hour		4 hours	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
South-east Queensland				
Mountain Creek	0	Met	0	Met
Deception Bay	0	Met	0	Met
Rocklea	0	Met	0	Met
Springwood	0	Met	0	Met
Flinders View	0	Met	0	Met
Townsville				
Pimlico	0	ND*	0	ND*

* ND Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to closure of the station



Sulfur dioxide

(NEPM standard: 1 hour=0.20 ppm, 1 day=0.08 ppm, 1 year=0.02 ppm)

Station	1 hour		1 day		1 year	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
South-east Queensland						
Springwood	0	Met	0	Met	0.001	Met
Flinders View	0	Met	0	Met	0.001	Met
Gladstone						
South Gladstone	0	Met	0	Met	0.002	Met
Townsville						
Pimlico	0	ND*	0	ND*	Insufficient data	ND*
Stuart	0	Met	0	Met	0.000	Met
Mount Isa						
Menzies	32	Not met	1	Met	0.007	Met
The Gap	24	Not met	0	Met	0.005	Met

* ND Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to closure of the station

Pb**Lead**(NEPM standard: 1 year= $0.50 \mu\text{g}/\text{m}^3$)

Station	Annual average ($\mu\text{g}/\text{m}^3$)	NEPM goal compliance
Townsville		
Coast Guard	0.05	Met
Mount Isa		
The Gap	0.06	ND*

* ND Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters

PM₁₀**Particles as PM₁₀**(NEPM standard: 1 day= $50 \mu\text{g}/\text{m}^3$)

Station	Number of exceedances	NEPM goal compliance
South-east Queensland		
Mountain Creek	0	Met
Rocklea	0	Met
Springwood	0	Met
Flinders View	0	Met
Gladstone		
South Gladstone	0	Met
Mackay		
West Mackay	0	Met
Townsville		
Pimlico	0	ND*
Mount Isa		
The Gap	1 [†]	Met

* ND Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to closure of the station

[†] exceedance due to a dust storm

PM_{2.5}

Particles as PM_{2.5}

(NEPM standard: 1 day=25 µg/m³, 1 year=8 µg/m³)

Station	1 year	
	Number of exceedances	Annual average (mg/m ³)
South-east Queensland		
Rocklea	0	6.5
Springwood	0	5.7
Gladstone		
South Gladstone	0	5.7

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Western Australia by the Hon Albert Jacob, MLA Minister for Environment; Heritage (21 March 2013 to 16 March 2017) and the Hon Stephen Dawson, Minister for Environment; Disability Services (17 March 2017 to 30 June 2017) for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

On 1 July 2017, the Western Australian Department of Environment Regulation was amalgamated with two other departments; the Department of Water and the Office of the Environmental Protection Authority and was renamed the Department of Water and Environmental Regulation.

In Western Australia, The National Environment Protection (Ambient Air Quality) Measure (NEPM) is implemented by the Department of Water and Environmental Regulation under the *National Environment Protection Council (WA) Act 1996* and the *Environmental Protection Act 1986*.

Implementation activities may be viewed in two categories:

- those activities related to implementing the monitoring and reporting protocol of the NEPM, plus other activities associated with the 'Future Actions' listed in the NEPM Impact Statement
- those activities within Western Australia (including regulatory activities) designed to ensure that air quality is in compliance with the NEPM goal for each of the six pollutants.

In the first category, the Department of Water and Environmental Regulation has:

- continued to liaise with local governments and other organisations as required to facilitate the establishment of fixed ambient monitoring stations
- maintained monitoring of carbon monoxide, oxides of nitrogen, ozone, sulfur dioxide and PM₁₀ and PM_{2.5} particle fractions.

In the second category, the Department of Water and Environmental Regulation has:

- continued to implement the Perth Air Quality Management Plan. The air quality management plan is a whole of government plan aimed at improving and maintaining Perth's air quality. Implementation of a number of priority actions within the management plan has commenced in addition to a number of ongoing programs. There continues to be a major focus on managing emissions from motor vehicles and wood heaters, via the CleanRun and BurnWise programs respectively.
- continued to investigate and trial a number of new monitoring technologies designed to establish a better understanding of the sources and emissions of pollutants and the dispersion of these pollutants in targeted areas. This includes monitoring campaigns that survey air quality in residential and other sensitive receptor areas, particularly where these areas may be impacted by industrial emissions.
- maintained community access to the regularly updated air quality index via Department of Water and Environmental Regulation's webpage (www.dwer.wa.gov.au/your-environment/air).

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The Ambient Air Quality NEPM has provided a focus for air quality issues and driven all jurisdictions to work towards nationally consistent monitoring techniques and reporting. This has culminated in the development and approval of monitoring plans for all jurisdictions, including Western Australia. The NEPM standards and goals provide an additional impetus for the implementation of air quality improvement strategies and are a useful benchmark against which air quality management can be assessed.

Air quality management initiatives implemented in Western Australia have placed the state in a favourable position to achieve compliance with the NEPM goals in most circumstances. For example, sulfur dioxide has been

effectively controlled by industry regulatory means. Carbon monoxide, lead and nitrogen dioxide concentrations comply with the NEPM standards by comfortable margins due to clean fuel quality standards, national vehicle emissions standards and regulatory control of other sources.

Ozone, PM₁₀ and PM_{2.5} remain pollutants of concern in the Perth metropolitan region and are the focus of attention within the air quality management plan, particularly the management of domestic PM₁₀ and PM_{2.5} sources. In regional areas, PM₁₀ and PM_{2.5} are the pollutants of most significance with respect to the NEPM standards.

The data presented below, show that Western Australia has met the NEPM goals for all pollutants in 2016 except for daily averaged PM₁₀ at regional centres Albany, Collie and Geraldton and annual averaged PM_{2.5} at regional centres Bunbury and Busselton.

Data from relevant monitoring stations for calendar year 2016 are presented in tabular form below to enable an evaluation of whether the NEPM standards and goal were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. For averaging times shorter than one year, compliance with the NEPM goal is achieved if the standard for a pollutant is exceeded on no more than a specified number of days in a calendar year (one day per year for all pollutants except PM₁₀ and PM_{2.5} which may not be exceeded unless the exceedance was directly associated with an exceptional event and at least 75 per cent of data are captured in each quarter).

The data are presented in greater detail in the Annual Western Australia Air Monitoring Report available on the Department of Water and Environmental Regulation's website, along with the Western Australian monitoring plan.

CO

Carbon monoxide

(NEPM standard: 8 hours=9.0 ppm)

Station	Number of exceedances	NEPM goal compliance
Perth		
North East Metro	0	Met
North Metro	0	Met
South-east Metro	0	Met

NO₂

Nitrogen dioxide

(NEPM standard: 1 hour=0.12 ppm, 1 year=0.03 ppm)

Station	1 hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Perth				
North Metro	0	Met	0.006	Met
North East Metro	0	Met	0.006	Met
Outer North Coast	0	Met	0.003	Met
South Coast	0	Met	0.004	Met
Outer East Rural	0	Met	0.002	Met
South-east Metro	0	Met	0.007	Met
Inner West Coast	0	Met	0.004	Met



Ozone

(NEPM standard: 1 hour=0.10 ppm, 4 hours=0.08 ppm)

Station	1 hour		4 hours	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Perth				
North East Metro	0	Met	1	Met
Outer North Coast	0	Met	0	Met
South Coast	0	Met	0	Met
Outer East Rural	0	Met	0	Met
South-east Metro	0	Met	0	Met
Inner West Coast	1	Met	1	Met



Sulfur dioxide

(NEPM standard: 1 hour=0.20 ppm, 1 day=0.08 ppm, 1 year=0.02 ppm)

Station	1 hour		1 day		1 year	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Perth						
South Metro	0	Met	0	Met	0.001	Met
South Coast	0	Met	0	Met	0.001	Met
South-east Metro	0	Met	0	Met	0.003	Met



Lead

(NEPM standard: 1 year=0.50 $\mu\text{g}/\text{m}^3$)

Lead monitoring ceased on 31 December 2001 following the introduction of unleaded petrol. These management initiatives consequently resulted in sustained measurements at analytical limits of detection well below the standard.

PM₁₀

Particles as PM₁₀
(NEPM standard: 1 day=50 µg/m³)

Station	1 day		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (mg/m ³)	NEPM goal compliance
Perth				
North East Metro ¹	0	Met	15.0	Met
North Metro ¹	0	Met	14.4	Met
South-east Metro ¹	0	Met	15.7	Met
Southwest				
Albany ¹	6	Not met	17.5	Met
Bunbury ¹	2	Met	16.5	Met
Collie ¹	5	Not met	19.3	Met
Midwest				
Geraldton ¹	3	Not met	18.8	Met

¹ Tapered Element Oscillating Microbalance (TEOM) operating continuously (unadjusted for temperature) and includes the manufacturers recommended equivalency factor of 1.03x + 3.00.

PM_{2.5}

Particles as PM_{2.5}
(NEPM standard: 1 day=25 µg/m³, 1 year=8 µg/m³)

Station	1 day		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (mg/m ³)	NEPM goal compliance
Perth				
North East Metro ¹	0	Met	7.7	Met
North Metro ¹	1	Met	7.5	Met
Outer North Coast ¹	2	Met	7.5	Met
South-east Metro ¹	3	Met	8.0	Met
Southwest				
Bunbury ¹	6	Met	8.4	Not met
Busselton ¹	4	Met	8.1	Not met

¹ Tapered Element Oscillating Microbalance (TEOM) operating continuously (unadjusted for temperature) and includes the manufacturers recommended equivalency factor of 1.03x + 3.00.

Relationship between location descriptors and monitoring station location/names

Location descriptor	Station location
North East Metro	Caversham
North Metro	Duncraig
Outer North Coast	Quinns Rocks
South-east Metro	South Lake

Location descriptor	Station location
Outer East Rural	Rolling Green
South Coast	Rockingham
Inner West Coast	Swanbourne
South Metro	Wattleup

South Australia

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for South Australia by the Hon Ian Hunter, Minister for Sustainability, Environment and Conservation, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- NEPM standards and goals for CO, NO₂ and O₃ were met at all stations.
- NEPM goal for PM₁₀ was met at Netley and Spencer Gulf stations.
- NEPM standard and goal for PM_{2.5} were met at Elizabeth and North Haven stations. The NEPM standard and goal was not met at Netley station.
- NEPM standard and goal for lead were met at both monitoring stations in Port Pirie.
- NEPM standards and goals for 1-hour SO₂ standard were not met at Port Pirie Oliver Street station with 61 exceedances. There were 6 exceedances of the 24-hour SO₂ standard. However the 1-year SO₂ standard was met.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Data for South Australia shows that air quality was generally good during 1 January to 31 December 2016. The following observations were made for this period:

- For CO the standard and goal were achieved at Elizabeth Downs station.
- For NO₂ the 1-hour and 1-year standards and goals were met at all Adelaide monitoring stations.
- For O₃ the 1-hour and 4-hour standards and goals were met at all Adelaide monitoring stations.
- For SO₂ the 1-hour, 1-day and 1-year standards and goals were met at the Adelaide metropolitan stations. The 1-year standard and goal were met at Port Pirie Oliver street station, however there were 61 exceedances of the 1-hour and 6 exceedances of the 1-day so the 1-hour and 1-day standards and goals were not achieved.
- For Pb the goal was achieved at both NEPM monitoring stations in Port Pirie.
- For PM₁₀ there was 1 exceedance of the standard at Elizabeth, Christie Downs, Kensington and North Haven. In the Spencer region, there were no exceedances of the standard at both Schulz Park and Oliver Street. The new NEPM goal does not allow for any exceedances per year therefore the goal was not achieved at most of Adelaide metropolitan stations.
- For PM_{2.5} the new reporting standard was met at Elizabeth and North Haven stations. It was not met at Netley station.

In 2014, the South Australian Government and Nyrstar announced a \$514 million investment by Nyrstar to transform the Port Pirie smelter, which sets out to improve environmental performance and reduce risks to human health. The SA EPA and Nyrstar are committed to focus on ongoing environmental improvements leading up to and throughout the commissioning phase with Nyrstar actively managing emissions.

Data from relevant monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goal were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. For averaging times shorter than one year, compliance with the NEPM goal is achieved if the standard for a pollutant is exceeded on no more than a specified number of days in a calendar year (one day per year for all pollutants except PM₁₀, which has no allowance for any exceedances) and at least 75 per cent of data are captured in each quarter.

CO

Carbon monoxide

(NEPM standard: 8 hours=9.0 ppm)

Station	Number of exceedances	NEPM goal compliance
ELI01 Elizabeth Downs	0	Met

NO₂

Nitrogen dioxide

(NEPM standard: 1 hour=0.12 ppm, 1 year=0.03 ppm)

Station	1 hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Adelaide				
ELI01 Elizabeth Downs	0	Met	0.003	Met
NOR01 Northfield	0	Met	0.006	Met
NET01 Netley	0	Met	0.007	Met
KEN01 Kensington Gardens	0	Met	0.004	Met
CHD01 Christies Downs	0	Met	0.004	Met
NHV01 North Haven	0	Met	0.004	Met

O₃

Ozone

(NEPM standard: 1 hour=0.10 ppm, 4 hours=0.08 ppm)

Station	1 hour		4 hours	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Adelaide				
ELI01 Elizabeth Downs	0	Met	0	Met
NOR01 Northfield	0	Met	0	Met
NET01 Netley	0	Met	0	Met
KEN01 Kensington Gardens	0	Met	0	Met
CHD01 Christies Downs	0	Met	0	Met
NHV01 North Haven	0	Met	0	Met



Sulfur dioxide

(NEPM standard: 1 hour=0.20 ppm, 1 day=0.08 ppm, 1 year=0.02 ppm)

Station	1 hour		1 day		1 year	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Adelaide						
NOR01 Northfield	0	Met	0	Met	0.000	Met
NHV01 North Haven	0	Met	0	Met	0.000	Met
Spencer						
PTP01 Pt Pirie Oliver street	61	Not met	6	Not met	0.014	Met



Lead

(NEPM standard: 1 year=0.50 $\mu\text{g}/\text{m}^3$)

Station	Annual average ($\mu\text{g}/\text{m}^3$)	NEPM goal compliance
Spencer		
PTP01 Pt Pirie Oliver street	0.38	Met
PTP05 Pt Pirie Frank Green Park	0.16	Met



Particles as PM_{10}

(NEPM standard: 1 day=50 $\mu\text{g}/\text{m}^3$)

Station	Number of exceedances	NEPM goal compliance
Adelaide		
ELI01 Elizabeth Downs	1	Not met
NET01 Netley	0	Met
CHD01 Christies Downs	1	Not met
KEN01 Kensington	1	Not met
NHV01 North Haven	1	Not met
Spencer		
WHY07 Whyalla Schulz Park	0	Met
PTP01 Pt Pirie Oliver street	0	Met

PM_{2.5} Particles as PM_{2.5}

(NEPM standard: 1 day=25 µg/m³, 1 year=8 µg/m³)

	1 day		1 year	
Station	Number of exceedances	NEPM goal compliance	Annual average (mg/m ³)	NEPM goal compliance
Adelaide				
ELI01 Elizabeth Downs	0	Met	4.5	Met
NET01 Netley	0	Met	9.0	Not met
NHV01 North Haven	0	Met	6.4	Met

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Tasmania by Hon Elise Archer MP, Minister for Environment and Parks for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- In Tasmania the enabling legislation for the National Environment Protection (Ambient Air Quality) Measure (Air NEPM) process is the *Environmental Management and Pollution Control Act 1994* (EMPCA). The process is implemented primarily through EPA Tasmania of the Department of Primary Industries, Parks, Water and the Environment (DPIPWE).
- National Environment Protection Measures are adopted as state policies under the *State Policies and Projects Act 1993*, and the Air NEPM is put into effect under the Environment Protection Policy (Air Quality) 2004 (Air Policy), the Environmental Management and Pollution Control (Distributed Atmospheric Emissions) Regulations 2007 and the Tasmanian Air Quality Strategy 2006.
- The air policy includes specific reference to meeting the requirements of the Air NEPM through regulation of industry and management of diffuse sources like planned burning activities. The policy is available on the EPA Tasmania's website at www.epa.tas.gov.au.
- Wood smoke from domestic wood heaters and from planned burning activities continues to be the primary air quality issue for Tasmania.
- In the Tasmanian Air Quality Strategy, published in June 2006, a five-year process to assess compliance with the Air NEPM standards in Tasmania is detailed, and strategies for achieving compliance where standards are not being met are specified. The strategy addresses the management of air quality in Tasmania and includes programs to further reduce domestic and industrial emissions of respirable particles in critical regions of the state.
- The Environmental Management and Pollution Control (Distributed Atmospheric Emissions) Regulations 2007, gazetted in August 2007, provide a legal framework for programmes to reduce the emission of domestic wood smoke through controls on the import, sale and installation of wood heaters. The regulations also make the emission of excessive smoke from chimneys an offence and they restrict back-yard burning on suburban allotments.
- In 2009, EPA Tasmania established a state-wide network of indicative level air monitoring stations referred to as the BLANKET (Base-Line Air Network of EPA Tasmania) network. In 2016–17 this network consisted of 34 fixed stations, including those co-located with the reference level stations at Hobart, Launceston and Devonport. This network of optical particle monitors, calibrated against reference level instruments, provides real-time information for understanding smoke concentration, movement and dispersal in the greater Tasmanian airshed. Air quality and meteorological data from the BLANKET network are published in near real-time on EPA Tasmania's website.
- Since 2009, planned burning activities undertaken by the forestry industry and by the Parks and Wildlife Service have been conducted using the Coordinated Smoke Management Strategy administered by the Forest Practices Authority. The Coordinated Smoke Management Strategy requires burners to make daily bids for burn units in a given air shed. Bidding is managed by an automated web-based system. The total burn unit allocation is set with reference to meteorological and other considerations. Air quality data from EPA Tasmania's state-wide BLANKET network is used to facilitate an annual review process to increase the strategy's effectiveness. Monitoring data from the BLANKET network shows that the severity of planned burn smoke impacts has decreased since the implementation of the Coordinated Smoke Management Strategy. Feedback from the users of the strategy indicates that their ability to make more informed decisions concerning smoke movement and dispersion is facilitated by the BLANKET air quality monitoring network and the analyses carried out by EPA Tasmania.
- In response to the growing understanding that poor winter-time air quality is widespread in many Tasmanian

towns and urban areas, the Domestic Smoke Management Program, an initiative of EPA Tasmania was started in 2012. The focus of the program is community education on air quality issues and how smoke emissions from domestic wood heaters can be significantly reduced through proper operation. The Domestic Smoke Management Plan is realised through collaborative projects with local government known as the *Burn Brighter this Winter* projects. Officers of EPA Tasmania and various councils work together on the *Burn Brighter this Winter* projects. The education and information campaign is backed up with air quality data from nearby BLANKET stations, mobile air quality monitoring and from smoky chimney surveys. These data enable appropriate information to be conveyed to specific households.

- Large bushfires in January and February 2016 resulted in smoke impacts across almost all of Tasmania.
- In winter 2016 a small, indicative-quality air station was deployed in several residential backyards as part of work undertaken with local government supporting chimney-smoke complaint-resolution. The small station, known as 'babyBLANKET', is easily relocatable and is of low-cost. The data from this station has assisted councils with their regulatory activities and also provides a window into 'peak-residential' woodsmoke exposure.
- The Tasmanian reference level air monitoring programme operates under an ISO:17025 compliant Quality System and holds NATA accreditation for the daily measurement of $PM_{2.5}$ and PM_{10} using the reference instruments and methods prescribed in the Air NEPM.
- A reference level air monitoring station at Devonport was commissioned in December 2012. This station is equipped with gravimetric air samplers for reference measurements of daily averaged $PM_{2.5}$ and PM_{10} particulate concentrations, as well as two Tapered Element Oscillating Microbalances to provide hourly-averaged $PM_{2.5}$ and PM_{10} data.
- A reference level peak carbon monoxide (CO) monitoring station was established in Macquarie Street, Hobart at the end of 2010. Regular monitoring commenced in February 2011, and continued until the stations was de-commissioned in February 2013. No exceedances of the NEPM standard for CO were recorded in this interval.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Particulates ($PM_{2.5}$ and PM_{10})

The Air NEPM has made a significant contribution to improved urban air quality in Tasmania, by raising community awareness of air quality issues and supporting programs aimed at reducing wood smoke pollution during winter. This has been particularly effective in Launceston, where a combination of a reduction in the number of wood heaters, and improved community co-operation has reduced winter PM_{10} levels.

Other ongoing programs to reduce the impacts of air pollution in Tasmania, driven at least in part by the Air NEPM and the associated air quality standards and goals, have been introduced in more recent years. These include the Domestic Smoke Management Program started in 2012 to address issues related to smoke from domestic wood heaters and the Coordinated Smoke Management Strategy established in 2009 to address issues related to smoke from planned burning activities.

Launceston

PM_{10}

Six exceedances of the 24 hour PM_{10} standard of $50 \mu g/m^3$ were measured in Launceston in 2016. Data capture rates for the four quarters of 2015 were 100 per cent, 89 per cent, 100 per cent and 100 per cent respectively, giving an annual rate of 97 per cent. The annual average PM_{10} was $13.8 \mu g/m^3$, which meets the annual PM_{10} standard of less than $25 \mu g/m^3$.

$PM_{2.5}$

The 24-hour $PM_{2.5}$ advisory reporting standard of $25 \mu g/m^3$ was exceeded on 9 days in Launceston in 2016. This is comparable with results from recent years (12 in 2015, 11 in 2014, 12 in 2013, 16 in 2012; 6 in 2011; 11 in 2010; and 12 in 2009). Overall, the 2016 result is a considerable improvement on the 35 exceedance days observed when

PM_{2.5} monitoring was introduced in 2006. The annual average PM_{2.5} concentration in 2016, of 7.6 µg/m³ meets the PM_{2.5} standard of less than 8 µg/m³, and comparable with annual averages from the past few years (7.8 µg/m³ in 2016; 8.7 in 2014; 8.1 µg/m³ in 2013; 8.4 µg/m³ in 2012; 7.5 µg/m³ in 2011; 8.3 µg/m³ in 2010; and 7.5 µg/m³ in 2009).

Hobart

PM₁₀

In Hobart in 2016 there were no exceedances of the 24-hour PM₁₀ standard. Data capture rates were 100 per cent in each quarter and annually. The annual average PM₁₀ level was 10.6 µg/m³, which meets the annual PM₁₀ standard of less than 25 µg/m³.

PM_{2.5}

The 25 µg/m³ advisory reporting standard for PM_{2.5} was exceeded in Hobart on 3 days in 2016. In 2015 there was one day above the standard. In 2014 and 2013 there were 3 days above the standard, 3 in 2012 and none in 2011. The annual average PM_{2.5} concentration of 5.5 µg/m³ was similar to but lower than that of the recent years (5.8 µg/m³ in 2015; 6.7 µg/m³ in 2014; 6.1 µg/m³ in 2013; 6.5 µg/m³ in 2012; and 6.2 µg/m³ in 2011), and met the annual average PM_{2.5} advisory standard of 8 µg/m³ for the ninth consecutive year since PM_{2.5} monitoring started at the New Town station.

Devonport

PM₁₀

2016 was the fourth full year of operation of the Devonport air monitoring station. Four exceedances of the 24 hour PM₁₀ standard were measured in this year. The annual average PM₁₀ level was 14.1 µg/m³, which meets the annual PM₁₀ standard of less than 25 µg/m³.

PM_{2.5}

The 24-hour PM_{2.5} concentrations measured in Devonport exceed the PM_{2.5} standard of 25 µg/m³ on eight days during 2016. The annual average PM_{2.5} concentration of 7.9 µg/m³ met the advisory standard of 8 µg/m³.

Carbon monoxide

The peak urban CO monitoring site in Macquarie Street, Hobart was closed in February 2013, after almost two years continuous operation. During this period, the highest hourly CO concentration measured at this high traffic CBD site never exceeded 4 ppm and the highest 8 hour average was 1.8 ppm. These data indicate that CO concentrations, generated by urban traffic in Tasmania, are unlikely to exceed the Air NEPM 8 hour CO standard of 9 ppm in the foreseeable future.

Data from relevant monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goal were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. Particle exceedances are reported when the validated day-average pollutant level is above the Ambient Air Quality NEPM standard. For averaging times shorter than one year, compliance with the NEPM goal is achieved if the standard for a pollutant is exceeded on no more than one day in a calendar year and at least 75 per cent of data are captured in each quarter.

The data are presented in greater detail in the annual Ambient Air Quality NEPM monitoring reports for Tasmania.

The monitoring plan for Tasmania is available from <http://epa.tas.gov.au/epa/air/monitoring-air-pollution/nepm-monitoring-information>.

CO

Carbon monoxide

(NEPM standard: 8 hours=9.0 ppm)

Not monitored since the closure of Hobart monitoring station in February 2013

NO₂**Nitrogen dioxide**

(NEPM standard: 1 hour=0.12 ppm, 1 year=0.03 ppm)

Not monitored for NEPM purposes in Tasmania.

O₃**Ozone**

(NEPM standard: 1 hour=0.10 ppm, 4 hours=0.08 ppm)

Not monitored for NEPM purposes in Tasmania.

SO₂**Sulfur dioxide**

(NEPM standard: 1 hour=0.20 ppm, 1 day=0.08 ppm, 1 year=0.02 ppm)

Not monitored in Tasmania.

Pb

Lead(NEPM standard: 1 year=0.50 µg/m³)

Not monitored since 1998.

PM₁₀**Particles as PM₁₀**(NEPM standard 1 day=50 µg/m³; 1 year=25 µg/m³)

Station	Number of day exceedances	Annual mean µg/m ³
Hobart (New Town)	0	10.6
Launceston (Ti Tree Bend)	6	13.8
Devonport (TAFE)	4	14.1

PM_{2.5}**Particles as PM_{2.5}**(NEPM standard: 1 day=25 µg/m³, 1 year=8 µg/m³)

Station	1 year	
	Annual average (ppm)	NEPM goal compliance
Hobart (New Town)	3	5.5
Launceston (Ti Tree Bend)	9	7.6
Devonport	8	7.9

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Australian Capital Territory by Mr Mick Gentleman, MLA for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The ACT's ambient air quality monitoring was performed in accordance with the ACT's monitoring plan, National Environment Protection (Ambient Air quality) Measure (NEPM) Technical Papers and ACT Health's National Association of Testing Authorities' accreditation.

The ACT's air quality in 2016 was assessed against the revised NEPM standards. In accordance with its agreed policy position, the ACT assessed its compliance for the annual average for particulate matter less than 10 microns (PM_{10}) against a lower standard of $20 \mu\text{g}/\text{m}^3$ rather than the NEPM standard of $25 \mu\text{g}/\text{m}^3$.

Due to a lack of heavy industry, the ACT has never monitored sulfur dioxide (SO_2) as it is primarily an industrial pollutant, and lead monitoring ceased in 2002 with the phase out of leaded petrol.

The ACT has implemented the revised emissions and efficiency Australian Standards for wood heaters through amendments to the *Environment Protection Act 1997* and *Environment Protection Regulation 2005*.

The ACT continues to implement a number of initiatives to reduce impacts from winter wood heater emissions. These include the regulation of firewood merchants, the Wood Heater Replacement program to remove old inefficient wood heaters and the annual Burn Right Tonight public education program on the correct use of wood heaters.

The NEPM monitoring network in the ACT consisted of three monitoring stations in 2016.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Monitoring results in 2016 demonstrate that Canberra's air quality is generally excellent, with no exceedances of the Ambient Air Quality NEPM standards for carbon monoxide, nitrogen dioxide, ozone, and particles as PM_{10} . The major impacts on Canberra's air quality in 2016 came from the accumulation of combustion particles from hazard reduction burns and wood heaters.

Data from relevant monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goal were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. For averaging times shorter than one year, compliance with the NEPM goal is achieved if the standard for a pollutant is exceeded on no more than a specified number of days in a calendar year (one day per year for all pollutants except PM_{10} , which may be exceeded no more than five days per year) and at least 75 per cent of data are captured in each quarter.

The data is presented in greater detail in the ACT annual Air Quality Report 2016, available at: www.accesscanberra.act.gov.au/app/answers/detail/a_id/1320/kw/air%20quality%20report#!tabs-4.

CO

Carbon monoxide

(NEPM standard: 8 hours=9.0 ppm)

Station	Number of exceedances	NEPM goal compliance
Monash	0	Met
Floreys	0	Met



Nitrogen dioxide

(NEPM standard: 1 hour=0.12 ppm, 1 year=0.03 ppm)

Station	1 hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Monash	0	Met	0.004	Met
Florey	0	Met	0.005	Met



Ozone

(NEPM standard: 1 hour=0.10 ppm, 4 hours=0.08 ppm)

Station	1 hour		4 hours	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Monash	0	Met	0	Met
Florey	0	Met	0	Met
Civic	0	Met	0	Met



Particles as PM₁₀

(NEPM standard: 1 day=50 µg/m³)

Station	1 day		1 year	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Monash	0	Met	0	Met
Florey	0	Met	0	Met
Civic	0	Met	0	Met



Particles as PM_{2.5}

(NEPM standard: 1 day=25 µg/m³, 1 year=8 µg/m³)

Station	1 day		1 year	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Monash	8	Not met	0	Met
Florey	0	Met	0	Met
Civic	1	Not met	0	Met

Northern Territory

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for the Northern Territory by the Hon Lauren Moss MLA, Minister for Environment and Natural Resources for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- The Northern Territory Environment Protection Authority was responsible for implementing the Air NEPM in the Northern Territory through the provisions of the *Waste Management and Pollution Control Act* and the *National Environment Protection Council (Northern Territory) Act 2004*.
- Major pollutants in the Darwin air shed are associated with controlled and uncontrolled bushfire activities in surrounding bushland.
- The Northern Territory's ambient air monitoring program is undertaken in accordance with the approved monitoring plan. The administrative frameworks for implementation of the NEPM are in place.
- In 2016-17 a third ambient air quality monitoring station (AQMS) was installed at Stokes Hill Wharf. The station complies with the National Environment Protection (Ambient Air Quality) Measure (NEPM) standards and will monitor all NEPM pollutants.
- The Stokes Hill Wharf AQMS is strategically located to monitor potential air quality impacts from industrial development and increased shipping traffic in Darwin Harbour providing improved air quality information for residents of the Darwin CBD and surrounds.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Data from relevant monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goal were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. For averaging times shorter than one year, compliance with the NEPM goal is achieved if the standard for a pollutant is exceeded on no more than a specified number of days in a calendar year (one day per year for all pollutants except PM_{10} , which may be exceeded no more than five days per year) and at least 75 per cent of data are captured in each quarter.

The data are presented in greater detail in <http://ntepa.webhop.net/NTEPA/Default.ltr.aspx>.

The monitoring plan for the Northern Territory is available from https://ntepa.nt.gov.au/data/assets/pdf_file/0010/284986/monitoringplan.pdf.

CO

Carbon monoxide

(NEPM standard: 8 hours=9.0 ppm)

Station	Number of exceedances	NEPM goal compliance
Palmerston	Nil	1 day a year
Winnellie	Nil	1 day a year



Nitrogen dioxide

(NEPM standard: 1 hour=0.12 ppm, 1 year=0.03 ppm)

Station	1 hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Palmerston	Nil	1 day a year	0.00179 ppm	None
Winnellie	Nil	1 day a year	0.00237 ppm	None



Ozone

(NEPM standard: 1 hour=0.10 ppm, 4 hours=0.08 ppm)

Station	1 hour		4 hours	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Palmerston	Nil	1 day a year	1	1 day a year
Winnellie	Nil	1 day a year	Nil	1 day a year



Sulfur dioxide

(NEPM standard: 1 hour=0.20 ppm, 1 day=0.08 ppm, 1 year=0.02 ppm)

Station	1 hour		1 day		1 year	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Palmerston	Nil	1 day a year	Nil	1 day a year	0.00025	None
Winnellie	Nil	1 day a year	Nil	1 day a year	0.0004	None



Particles as PM_{10}

(NEPM standard: 1 day=50 $\mu\text{g}/\text{m}^3$)

Station	Number of exceedances	NEPM goal compliance	Annual average (mg/m^3)
Palmerston	6	None	17.67
Winnellie	3	None	18.18

PM_{2.5}

Particles as PM_{2.5}

(NEPM standard: 1 day=25 µg/m³, 1 year=8 µg/m³)

	1 year	
Station	Number of exceedances	Annual average (mg/m³)
Palmerston	14	7.51
Winnellie	9	7.67

Appendix 3:
Jurisdictional reports on
the implementation and
effectiveness of the
Assessment of Site
Contamination
National Environment
Protection Measure

Commonwealth

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure for Commonwealth by the Hon Josh Frydenberg MP, Minister for the Environment and Energy, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

Australian Government agencies are conducting site assessments, including for the chemicals perfluorooctane sulfonic acid (PFOS) and its salts, perfluorooctanoic acid (PFOA), perfluorohexane sulfonic acid (PFHxS), and other perfluoroalkyl substances (PFASs) in accordance with the Assessment of Site Contamination NEPM.

The approaches in the Assessment of Site Contamination NEPM underpin the collaborative work underway among the Commonwealth, states and territories on the PFAS National Environmental Management Plan, initiated by environment ministers in late 2016. This builds on the Draft Commonwealth Environmental Management Guidance on Perfluorooctane Sulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA), published by the Department of the Environment and Energy in late 2016.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The Assessment of Site Contamination NEPM (ASC NEPM) provides a consistent national methodology which is beneficial for achieving agency goals.

New South Wales

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure for New South Wales by the Hon Gabrielle Upton, Minister for the Environment for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- The comments and issues raised by the NSW Environment Protection Authority in the 2015–16 report to NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure (the NEPM), continue to be relevant as outlined below.
- The NSW Environment Protection Authority considers the NEPM when making a decision on whether a contaminated site requires regulation under the *Contaminated Land Management Act 1997* (NSW) and when conducting performance reviews of accredited contaminated site auditors. Overall, the NEPM has improved the efficiency of regulating contaminated sites in NSW.
- During the year ending 30 June 2017, the NSW Environment Protection Authority was notified of 35 potentially contaminated sites, finalised 323 site assessments, regulated four new contaminated sites, and facilitated the remediation of three sites under the *Contaminated Land Management Act 1997* (NSW).
- The NSW Environment Protection Authority verifies that site audits and site audit statements have been undertaken with due regard to the NEPM through its quality assurance program. Accredited site auditors have issued a total of 277 audit statements; 165 statutory audits under the *Contaminated Land Management Act 1997* (NSW) and 62 non-statutory audits.
- The NSW Environment Protection Authority is aware of some implementation issues in relation to applying NEPM criteria for asbestos and benzo[α]pyrene (BaP), and more generally there are a limited number of ecological investigation levels for contaminants.
- Ecological screening levels for BaP are considered to be of low reliability and applying the BaP ecological screening levels may lead to an overly conservative approach to site assessment and remediation. The South Australian Environment Protection Authority has provided guidance in relation to the application of the BaP ecological screening levels.
- The limited number of ecological screening levels for contaminants and new ecological investigation level derivation methodology is presenting challenges where there is no ecological investigation level prescribed for a contaminant. A working group has been established to develop a consistent framework for the derivation and adoption of new ecological investigation levels.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The NSW Environment Protection Authority continues to liaise and coordinate with equivalent agencies in other jurisdictions. These relationships were established during the NEPM amendment process and have continued, allowing issues relating to the assessment of land contamination to be consistently managed in all jurisdictions.

The NSW Environment Protection Authority is continuing to update relevant legislative instruments and guidance to incorporate or refer to the amendments.

The reviews of the application of the NEPM criteria are likely to improve the effectiveness of the NEPM and the assessment of site contamination in New South Wales.

Victoria

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure for Victoria by the Hon Lily D'Ambrosio, Minister for Energy, Environment and Climate Change for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The transition period to the Assessment of Site Contamination NEPM finished in May 2014 and there now seems to be widespread acceptance and use of it, in name.

Issues of note:

- Flow on implications for other policy areas that had been reliant on the original NEPM approaches and values. For example, there is a discrepancy between soil characterisation guidance e.g. what soil/fill is acceptable to remain on individual sites (for particular land uses) and what is accepted to landfill.
- The adequacy of the health investigation levels for lead in soil for the protection of human health following the release of the NHMRC Statement: Evidence on the effects of lead on human health (the Statement) and associated publications on blood lead levels. Contaminated sites regulators are being questioned by risk assessors and contaminated site assessors and auditors in relation to the applicability of the lead health investigation levels as screening criteria for soil and also the appropriate assumptions and inputs when deriving a site-specific clean-up target value for lead in soil. This issue was raised in 2016 and remains an issue that has been raised with the Environmental Health Standing Committee (enHealth) and it is being attempted to be resolved.
- Administrative error during the drafting of Schedule B3 resulted in information regarding acetone/hexane being omitted from the table in section 10.2.8. This issue was raised in 2016 and remains an issue to be resolved.
- Lack of guidance relating to emerging chemicals of concern, in particular PFAS, which has led to issues dealing with a number of highly PFAS contaminated sites. It is noted that the Draft PFAS NEMP will address some of these issues.

In response, Victoria has contributed to the following:

- The National Contaminated Environments Network, which comprises representatives of the contaminated sites regulators of Australia, has written to enHealth seeking advice on the protectiveness of the current health investigation level for lead provided in the NEPM.
- The National Contaminated Environments Network has informed the NEPC secretariat of the omission of acetone/hexane and requested it for inclusion in the errata.
- The Environment Protection Authority Victoria is currently reviewing the Industrial Waste Resource Regulations (2009) and related guidance and this will include a review of soil fill acceptance criteria.
- Established a PFAS working group to developing interim guidance on PFAS management during the development of the National Environmental Management Plan (NEMP). The PFAS NEMP builds on the NEPM, it is not going to replace it.
- Updated website to provide information on the interim management approach for PFAS impacted material.
- Led the PFAS Summit (4–5 April 2017 in Victoria).
- Contributed to the development of the draft for PFAS NEMP.
- Obtained executive approval to establish an Emerging Chemicals Coordination Group.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The amended NEPM continues to reinforce an existing framework for the management of contaminated sites in Victoria by providing consistent, consolidated guidance on the assessment of site contamination. Some improvements in the consistency of site assessment have resulted from use of the NEPM.

The NEPM amendments were considered likely to involve more detailed site assessments being undertaken in some cases. While these were likely to increase costs during the assessment phase, they were expected to result in overall cost savings for business as a result of more effective, timely and targeted remediation works.

Our experience continues to be that there is no evidence to suggest that the amendment has resulted in any other outcome. Indeed, the amendments to the NEPM continue to be well supported by environmental auditors and others in the site assessment industry, to the extent that there are works underway to develop a National Remediation Framework—this would not be a NEPM itself but would complement the Assessment of Site Contamination. A number of the draft documents have been circulated publicly for comment, more details are available at www.crccare.com/knowledge-sharing/national-remediation-framework.

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure for Queensland by the Hon Steve Miles MP, Minister for Environment and Heritage Protection and Minister for National Parks and the Great Barrier Reef for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The Department of Environment and Heritage Protection is the central administering authority for contaminated land in Queensland under the *Environmental Protection Act 1994* (EP Act).

Commencing on 1 July 2017, under the Planning Regulation 2017, prohibited development is that which is commenced on land listed on Queensland's Environmental Management Register or Contaminated Land Register, unless the land is remediated fit for purpose. The Department of Infrastructure, Local Government and Planning is the administering authority of the planning regulation. The Department of Environment and Heritage Protection provides the Department of Infrastructure, Local Government and Planning with advice on matters related to contaminated land.

In Queensland, it is mandatory for contaminated land investigation documents, which includes site investigation reports, validation reports and draft site management plans, to be certified by an approved auditor prior to being submitted to the Department of Environment and Heritage Protection.

The Department of Environment and Heritage Protection has appointed 19 contaminated land auditors to perform regulatory functions under section 568 of the Environment Protection Act.

The following relevant operational data associated with NEPM implementation were collected in the reporting period 2016–17.

- 50 contaminated land investigation documents, reviewed for compliance with NEPM prior to statutory decisions regarding Environmental Management Register/Contaminated Land Register status of the subject land. All reports submitted as contaminated land investigation documents were reviewed by approved auditors
- 94 sites were listed on the Environmental Management Register for a hazardous contaminant.
- 202 sites were listed on the Environmental Management Register as a notifiable activity under scheduled 3 of the Environment Protection Act.
- The Department of Environment and Heritage Protection has appointed 19 contaminated land auditors which includes mutual recognition on the basis of approvals held in other jurisdictions. These auditor applications are assessed by a Department of Environment and Heritage Protection approved technical panel who are engaged to review contaminated land auditor applications on behalf of the Department.
- 80 sites were finalised as being adequately assessed according to NEPM, remediated and removed from the Environmental Management Register.
- 10 site management plans were issued for development or use of a site, including those that were assessed and partially remediated with management of residual contamination for restricted land uses.
- 284 permits were issued for the transport and disposal of contaminated soil in accordance with NEPM section 6 (4).

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The NEPM (and the amended NEPM) is a central reference document for the assessment of site contamination in Queensland. It is supported by Queensland's guidelines on contaminated land and, in instances of surface and groundwater contamination, the Environmental Protection Water Policy 2009. Its use is well established in contaminated land practices, leading to effective and practical site and development outcomes.

The use of the NEPM by contaminated land practitioners has been recognised by the Department of Environment and Heritage Protection through the provisions of the operational policy and guidelines relating to assessment of contaminated land. All applications to the Department of Environment and Heritage Protection for statutory decisions about site contamination and changing the status of land on the Environmental Management Register/Contaminated Land Register must demonstrate compliance with the current NEPM in accordance with the Environment Protection Act.

The NEPM (1999) was used as an effective technical basis for site assessment for contaminated site professionals operating in Queensland.

The introduction of the amended NEPM has addressed the following previous limitations: adequate guidance for selected types of contamination affecting terrestrial ecosystem, vapour flux, aesthetic and management impacts of petroleum hydrocarbon compounds in soil and groundwater, and fragments of cement bonded asbestos commonly encountered on contaminated sites. Statutory approval conditions related to land development require current NEPM adherence. The quality control procedures applied by the Department of Environment and Heritage Protection in internal review of assessment reports involve a review of the practitioner's adherence to the current NEPM.

The establishment and implementation of the contaminated land auditor approval framework has successfully led to the certification of 19 auditors. The selection and approval of the persons to be auditors has been structured around Schedule B9 of the amended NEPM 1999.

In addition, the acceptance of accredited auditors from other Australian jurisdictions continues to provide an additional check of consistency between Queensland and other Australian jurisdictions.

Implementation of the general provisions of the NEPM is limited by the lack of adequate guidance for particular common types of contamination. This includes fluorinated organic chemicals that are now commonly encountered on contaminated sites.

It is considered that clarification of these issues in any future revision of the NEPM would assist jurisdictions and practitioners.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure for Western Australia by the Hon Albert Jacob, MLA Minister for Environment; Heritage (21 March 2013 to 16 March 2017) and the Hon Stephen Dawson, Minister for Environment; Disability Services (17 March 2017 to 30 June 2017) for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

On 1 July 2017, the Western Australian Department of Environment Regulation was amalgamated with two other departments: the Department of Water and the Office of the Environmental Protection Authority and was renamed the Department of Water and Environmental Regulation.

- The Department of Environment Regulation is responsible for regulating the assessment of site contamination in Western Australia (WA) under the *Contaminated Sites Act 2003* (CS Act) and the Contaminated Sites Regulations 2006.
- The NEPM and other relevant technical guidelines are taken into account by the Department of Water and Environmental Regulation in regulating contaminated sites, by contaminated sites auditors when conducting site audits, and by environmental consultants when assessing the risk to human health and the environment from known and suspected contaminated sites.
- During the year ended 30 June 2017, 371 known or suspected contaminated sites were reported to the Department of Water and Environmental Regulation compared with 166 in the previous year. In the same period, the Department of Water and Environmental Regulation received 62 mandatory audit reports related to contaminated sites. These reports were submitted to comply with conditions imposed under a written law, generally a ministerial or planning condition, or as part of the investigation or remediation of a contaminated or possibly contaminated site.
- Compliance with the NEPM and departmental guidelines is assessed in the site classification/ reclassification process under the Contaminated Sites Act. The Department classified 448 sites (including reclassifications) during the year, bringing the total number of classified sites to 3,549. As of 30 June 2017, 920 of these sites were listed on the public contaminated sites database and require remediation or restrictions on the use of the land and/or groundwater to protect public health and/or the environment and/or environmental values.
- Environmental practitioner's awareness of the amended NEPM requirements has continued to improve in WA and as a result, the assessment reports submitted to the Department of Water and Environmental Regulation show more consistency in the application of the guidance.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The Department of Water and Environmental Regulation regularly liaises with environmental regulators in other jurisdictions to ensure a nationally consistent approach can be developed for any new implementation issues as they arise.

The limited number of ecological investigation levels provided in the NEPM is a major limitation identified in consistency in implementation. Although the NEPM provides a detailed methodology in Schedule B5b for developing new ecological investigation levels, this is rarely done in practice for individual site assessments due to the time and effort required to carry out an appropriately detailed literature search to identify and assess relevant ecotoxicity data.

To ensure that the NEPM continues to provide authoritative guidance where site contamination has occurred, it is important that the guidance is periodically reviewed in the context of advances in scientific knowledge and updated technical information. The inclusion of relevant supporting material in the NEPM tool box assists in promoting a nationally consistent approach to emerging issues. The inclusion of new ecological investigation levels in the tool box, derived using the NEPM methodology by appropriately qualified experts and endorsed by environmental regulators, would be consistent with the purpose and desired environmental outcome of the NEPM.

South Australia

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure for South Australia by the Hon Ian Hunter MLC, Minister for Sustainability, Environment and Conservation for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The South Australian Environment Protection Authority (EPA) is responsible for administering the implementation of the National Environment Protection (Assessment of Site Contamination) Measure (the NEPM) in South Australia.

In South Australia, site contamination is managed through a framework established under the *Environment Protection Act 1993* (the Act).

The purpose and desired environmental outcome of the NEPM and the NEPM technical guidance is continued to be supported through EPA published guidelines and advice. The NEPM guidance is also used to inform the EPA's site prioritisation and risk-based regulatory decision making and actions in relation to site contamination. Guidance which describes the NEPM is available to the public from the EPA website.

A part of the EPA's core business is to ensure appropriate management of identified site contamination across the state and ensure information about known site contamination is publicly available.

The EPA provides written and verbal guidance and information in respect to site contamination and the NEPM, to accredited auditors, site contamination consultants, planning authorities, peak industry groups and the community. Selected technical guidelines are guidelines prescribed under the Act and must be taken into account in the regulation, auditing and assessment of site contamination by relevant persons including site contamination auditors and consultants.

During the 2016–17 reporting period, the EPA recorded 135 notifications of site contamination that affects or threatens underground water on the Public Register, required to be kept by the EPA under the Act. In the same period, the EPA recorded 35 audit reports. As of 30 June 2017, there were 26 site contamination auditors accredited by the EPA. An index of site contamination information and auditor register is available to the public on the EPA website.

The Environment Protection Authority's actions which support the implementation of the NEPM during 2016–17 include the following:

- publication of the Site contamination: Regulatory and orphan site management framework
- completion and publication of several orphan site contamination assessment programs
- increased use of voluntary proposals for the regulation of site contamination
- successful installation of pilot trial vapour intrusion mitigation systems
- enhancing stakeholder communication and engagement, which included:
 - extensive campaigns in orphan site assessment areas
 - conducting an awareness-raising campaign to ensure that people with bores make certain their water is fit for use
 - improving availability and accessibility of site contamination information through the web, print media and via the public register.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The EPA continues to strengthen its systems, communications, guidance and tools to support the implementation of the NEPM. Several important issues which influence the effectiveness of the EPA's implementation of the NEPM include the following:

- Site contamination guidance and policy

The EPA has continued to progress the development of revised guidelines to support the NEPM, following its amendment in 2013. The EPA is also progressing the development of appropriate effective policy and legislation to give effect to the NEPM.

- Site contamination planning framework

To ensure site contamination is appropriately recognised, considered and addressed throughout South Australia, the EPA provides related advice and guidance, and regulation. While the EPA has a significant role in this respect, state planning and development processes play a critical part in supporting principle 5 of the NEPM. The planning system has an important role in ensuring risks posed by site contamination are minimised when land changes use or is otherwise developed. To improve the consistency and risk-based decision making, a review of the processes for managing site contamination through the state's planning and development systems has been completed and work on a framework to properly integrate site contamination into planning and development legislation is currently being undertaken.

- Certification of environmental professionals

The EPA is progressing a proposed approach which will require certain site contamination reports being provided to the EPA or to planning authorities to be prepared or reviewed by a certified site contamination assessment practitioner, which supports the guidance provided in Schedule B9 of the NEPM.

- National harmonisation of auditor accreditation

Of the 26 site contamination auditors currently accredited by the EPA, 20 have been granted accreditation through the mutual recognition process. The national harmonisation of auditor accreditation requirements, consistent with Schedule B9 of the NEPM, would ensure a consistent technical standard across all jurisdictions and provide benefits to future applicants through improved application processes. The EPA strongly supports the development of an agreed national harmonisation approach.

- Community and stakeholder engagement

The awareness of the need for community engagement for communities affected by site contamination is becoming increasingly important and more recognised by environmental practitioners. Schedule B8 of the NEPM provides clear guidance on the principles for risk communication in relation to site contamination. The EPA continues to seek that effective and appropriate community engagement be planned and implemented by all appropriate parties.

The NEPM includes an inbuilt review process and the active and ongoing review of the NEPM is considered essential to ensure that it continues to:

- incorporate new scientific knowledge and updated technical information
- maintain credibility as the premier and authoritative source of technical guidance on health and environmental outcomes related to site contamination in Australia, and
- provide increased certainty that human health and the environment are adequately protected.

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure for Tasmania by the Hon Elise Archer MP, Minister for Environment and Parks for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The amended National Environment Protection (Assessment of Site Contamination) Measure (NEPM) automatically became a state policy in Tasmania under the *State Policies and Projects Act 1993*.

The NEPM is implemented in the following ways:

- Where a notice issued under the *Environmental Management and Pollution Control Act 1994* requires that an environmental site assessment is undertaken in accordance with the NEPM, the amended NEPM must be used.
- A requirement exists in legislation that any reports received under the Environmental Management and Pollution Control (Underground Petroleum Storage Systems) Regulations 2010 comply with the NEPM. UPSS Guidance for Decommissioning of Storage systems was revised to bring it in line with the assessment approach provided by the amended NEPM; compliance with the guidance is mandatory under the regulations. UPSS Guideline 1 provides a list of required report content. UPSS Guideline 2 relates to sampling and risk assessment and provides minimum sampling numbers
- Non statutory reports received by EPA Tasmania for purposes, such as to satisfy Planning Authority requirements prior to redevelopment, must also comply with the NEPM.
- The requirement to comply with the NEPM is further enhanced through the decision of the Director, EPA to only accept contaminated site reports for review if they have been provided by a consultant who is certified under Site Contamination Practitioners Australia. These consultants have passed a selection process in which their technical capabilities have been demonstrated.
- Efforts are ongoing to ensure stakeholders (e.g. site owners, operators, consultants and the community) are well informed in relation to the content of the NEPM.
- The most significant issue during 2016–17 was the increasing emergence of PFAS as a national contaminant of concern. Tasmania is currently investigating a number of potentially contaminated sites around the state, and is working closely with state and Australian Government counterparts.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The NEPM comprises the main standard for preparation of environmental site assessments and other reports as well as screening levels for the management and remediation of contaminated sites.

Some additional clarity could be provided in the area of assessment of Petroleum Vapour Intrusion at operating service stations. While guidance on Petroleum Vapour Intrusion assessment for both modelling and vapour sampling is clear, some uncertainty exists as to how and when this should be applied in the context of an operating service station where fugitive vapour emissions may be far in excess of those likely from Petroleum Vapour Intrusion.

As discussed in the 2014–15 Report to the NEPC, inclusion of guidance on volatile organic chlorinated compounds would be a welcome addition to the NEPM.

In the field of emerging contaminants, perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) are becoming prominent in the Tasmanian context. A uniform and consistent approach to assessment and remediation of this contamination is required across all jurisdictions, particularly as there are major landowners and operators who are responding to contamination risks in multiple jurisdictions. It is anticipated that the proposed Intergovernmental Agreement on the Environment will support jurisdictions in managing the challenges associated with this range of contaminants.

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure for the Australian Capital Territory by Mr Mick Gentleman MLA for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

Access Canberra, within the Chief Minister, Treasury and Economic Development Directorate, is responsible for the implementation and administration of the amended National Environment Protection (Assessment of Site Contamination) Measure (the NEPM). The Environment, Planning and Sustainable Development Directorate (EPSDD) continue to be responsible for the development of legislation and policy to ensure the NEPM is appropriately implemented in the ACT.

The provisions of the NEPM are implemented under the *Environment Protection Act 1997* (the Act). The Contaminated Sites Environment Protection Policy, made under the Act, is the primary policy document for the assessment and management of contaminated land in the ACT. The policy references the NEPM as the key resource for assessing contaminated land in the ACT. The Contaminated Sites Environment Protection Policy is currently being reviewed to ensure it remains a contemporary policy document.

Due to the lack of historic industrial activity in the ACT the main sources of contaminated land continues to be from underground petroleum storage, historic land filling and rural activities such as sheep dips. Contamination from PFAS related products is an emerging issue but generally confined in the ACT to fire training activities at a limited number of sites.

All contaminated site assessments undertaken in the ACT must be undertaken in accordance with the NEPM.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The NEPM, its toolbox and the environment protection policy are the primary reference tools used by contaminated land practitioners in the ACT. This has ensured a consistent and effective approach to site assessment across the ACT.

Northern Territory

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure for the Northern Territory by the Hon Lauren Moss, Minister for Environment and Natural Resources for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- In the reporting period of 1 July 2016 to 30 June 2017 the Northern Territory has continued to implement the Assessment of Site Contamination NEPM through the following measures.
- The Northern Territory Environment Protection Authority (EPA) has finalised the Northern Territory Contaminated Land Guideline covering all aspects of the Assessment of Site Contamination NEPM. This followed a public consultation period in which valuable input was received from industry, other jurisdictions, and accredited contaminated site auditors. In the longer term, consideration is being given to developing an environment protection objective under the *Waste Management and Pollution Control Act* to formalise enforceable policy for contaminated sites in the Northern Territory.
- Asbestos, per and poly fluorinated alkyl substances (PFAS) and herbicides and pesticides (including Mirex) continue to be identified as contaminants of concern in the Northern Territory.
- Asbestos is being addressed through the further implementation of a Northern Territory interagency asbestos committee, on-going development of an asbestos register which will form part of the contaminated sites register. The Northern Territory EPA and the Australian Government have collaborated on issues such as asbestos assessment and remediation at the RAAF Base Darwin and Cox Peninsula.
- The Northern Territory EPA has established an interagency working group to investigate PFAS contamination issues across the Northern Territory. The working group comprises Northern Territory and Australian Government agencies and includes Darwin International Airport and Air Services Australia. Initial investigations have revealed positive results for PFAS at locations in the Darwin area. Options to further investigate the extent of contamination at a number of key sites, including the three key defence sites, are being considered.
- Herbicides and pesticides (including Mirex — defined as a persistent organic pollutant) have been identified as potential contaminants associated with mango orchards, banana plantations and market gardens within the Northern Territory. Where appropriate, planning approvals process have required proponents who are changing the use of former market gardens to more sensitive uses to undertake preliminary site investigations in accordance with the Assessment of Site Contamination NEPM. Remediation of sites has been required and has occurred.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The NEPM has allowed for the *level playing field* for site contamination assessment and remediation to be established in the Northern Territory. It helps to ensure that all parties are aware of their requirements and responsibilities within the site assessment and remediation process, and assists in developing clean-up end points in relation to potential risk to environmental receptors and human health.

Further implementation of the Assessment of Site Contamination NEPM within the Northern Territory is required to ensure that all parties are clearly aware of all requirements outlined within the Assessment of Site Contamination NEPM. Progress is being made with external parties to make them aware of the requirements of the Assessment of Site Contamination NEPM. This is being achieved through the continuing development of the strategies mentioned in Part 1 and further interaction and consultation with planning authorities, professional organisations such as the Australian Land and Groundwater Association and the community.

Appendix 4: Jurisdictional reports on the implementation and effectiveness of the Diesel Vehicle Emissions National Environment Protection Measure

Commonwealth

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for the Commonwealth by the Hon Josh Frydenberg MP, Minister for the Environment and Energy, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- The National Environment Protection (Diesel Vehicle Emissions) Measure (Diesel NEPM) is supported by the following Commonwealth legislative, regulatory and administrative framework:
 - Australian Design Rules under the *Motor Vehicle Standards Act 1989*
 - *Fuel Quality Standards Act 2000* and fuel quality standards
 - fuel tax credit arrangements.
- On 31 October 2015, the Australian Government announced a whole of government review of vehicle emissions through the establishment of a Ministerial Forum on Vehicle Emissions. The Ministerial Forum is looking at:
 - introducing light vehicle fuel efficiency standards to reduce CO₂ emissions
 - moving from the Euro 5/V standard to Euro 6/VI to reduce noxious emissions from light/heavy vehicles
 - improving the fuel quality standards to reduce noxious emissions, ensure engine operability and facilitate better engine technology
 - other measures, including consumer information programs, Australian Government fleet purchasing, testing standards, and initiatives to support the adoption of alternative fuels, electric vehicles and intelligent transport systems.

The Commonwealth monitors fuel quality at all stages of the fuel supply chain to ensure it complies with the *Fuel Quality Standards Act 2000* (the Act). The objects of the Act are to:

- a) regulate the quality of fuel supplied in Australia in order to:
 - i. reduce the level of pollutants and emissions arising from the use of fuel that may cause environmental and health problems
 - ii. facilitate the adoption of better engine technology and emission control technology
 - iii. allow the more effective operation of engines
 - b) ensure that, where appropriate, information about fuel is provided when the fuel is supplied.
- In 2016–17, authorised fuel inspectors visited 436 sites and tested 1204 samples for compliance with the Act. The Department identified 34 instances of non-compliance with the Act. The Department engaged with stakeholders following these instances to encourage voluntary compliance with the Act. Ongoing non-compliance from one supplier resulted in the Department issuing an infringement notice for the supply of non-compliant fuel.
 - A statutory review of the *Fuel Quality Standards Act 2000* was completed in April 2016. The review sought to determine the efficiency, effectiveness and appropriateness of the Act in achieving its objects, and advise on options for improvement. It found that the Act has met its objectives, and recommended that the Act be retained, with amendments. The review report is available at www.environment.gov.au/protection/fuel-quality/legislation/review-2015. The Department is currently undertaking a review of the legislative instruments (including fuel standards) made under the Act.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The Commonwealth considers the Diesel NEPM to be a component of the broader framework to manage emissions. While the Commonwealth has no airshed responsibilities in regard to NEPM goals, considerable progress has been made toward achieving these goals through national initiatives including the ADRs and fuel quality standards.

The Commonwealth is making strong progress towards reducing emissions from in-service diesel vehicles through:

- ongoing administration of the *Fuel Quality Standards Act 2000* and the *Motor Vehicle Standards Act 1989*
- proper maintenance and management of its diesel fleet
- provision of the fuel tax credit to encourage proper engine maintenance and use of cleaner diesel engine vehicles.

New South Wales

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for New South Wales by the Hon Gabrielle Upton, Minister for the Environment, Minister for Local Government, and Minister for Heritage for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

In NSW, the *Protection of the Environment Operations Act 1997* (NSW) and the *Protection of the Environment Operations (Clean Air) Regulation 2010* (NSW) provide the regulatory framework for action to address emissions from the in-service diesel fleet.

In 2011, the Australian Government Department of the Environment and Energy (formerly the Department of Sustainability, Environment, Water, Population and Communities) advised NSW Roads and Maritime Services that, as the National Environment Protection (Diesel Vehicle Emissions) Measure (D-NEPM) Funding Agreement had expired, D-NEPM projects were to be placed on hold and no further funds were to be expended, while the Australian Government Department of the Environment and Energy considered options for dealing with the unspent funds.

As at 30 June 2017, Roads and Maritime Services had not received any further information regarding the Funding Agreement and accordingly all D-NEPM projects remained on hold. Roads and Maritime Services has advised the Commonwealth Department of Environment and Energy that the associated D-NEPM programs will be closed down.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

In NSW, the Environment Protection Authority (EPA) and NSW transport agencies, the Roads and Maritime Services and the State Transit Authority, continue to collect data on the diesel vehicle fleet and implement a range of NSW Government funded programs to reduce diesel emissions. In 2016–17, NSW continued the Smoky Vehicle Program, continued implementation of the EPA's Diesel and Marine Emissions Management Strategy, continued the Clean Fleet Program, and continued the State Transit Authority's diesel bus upgrade program.

NSW diesel fleet profile

Diesel vehicles as a percentage of total NSW vehicle fleet

Roads and Maritime Services registration data show that the proportion of diesel vehicles in the fleet constituted 18.14 per cent of the total NSW fleet at 30 June 2017 (see Table 1). This is compared to 16.95 per cent in 2016, 18.56 per cent in 2015 and 17.26 per cent in 2014.

Roads and Maritime Services registration data indicate that, between June 2016 and June 2017, the number of diesel vehicles registered in NSW increased by 99,744 or 9.35 per cent. Light commercial vehicles increased by 11.76 per cent over the previous year, and constitute the largest sector of the diesel fleet at 37.18 per cent. Off-road passenger vehicles account for 36.33 per cent of the diesel fleet. Together, these categories account for 73.51 per cent of the total diesel fleet in NSW. Table 2 shows changes in diesel vehicles by category between June 2016 and June 2017.

Table 1: Diesel vehicles by category as a proportion of the total fleet and diesel fleet

Diesel vehicles (%)									
NSW June 2017	Passenger vehicles	Off-road passenger vehicles	Light commercial vehicles	Heavy trucks	Prime movers	Small buses	Buses	Other	Total
Diesels in total NSW fleet (%)	2.28	6.59	6.74	1.51	1.33	0.15	0.20	0.33	18.14
Vehicles by category in diesel fleet (%)	12.59	36.33	37.18	8.32	1.81	0.85	1.11	1.82	100

Source: Roads and Maritime Services registration data (June 2017)

Note: Calculations exclude both light and heavy registered trailers.

Table 2: Change in diesel vehicles by category

Vehicle type	No. of diesel vehicles		Change	Percentage change (%)	Proportion of total decrease (%)	Proportion of total increase (%)
	Jun-16	Jun-17				
Passenger vehicles	126,289	146,769	20,480	16.22		20.53
Off-road passenger vehicles	395,221	423,628	28,407	7.19		28.48
People movers	9070	9714	644	7.10		0.65
Small buses	9667	9927	260	2.69		0.26
Light trucks	388,005	433,649	45,644	11.76		45.76
Light plants	1693	1591	-102	-6.02	-0.10	
Buses	12,645	12,889	244	1.93		0.24
Heavy trucks	94,048	97,002	2954	3.14		2.96
Prime movers	20,287	21,117	830	4.09		0.83
Heavy plants	4015	3912	-103	-2.57	-0.10	
Other	5527	6013	486	8.79		0.49
Total	1,066,467	1,166,211	99,744	9.35		

Source: Roads and Maritime Services registration data (June 2017)

Diesel vehicles emissions estimates

Diesel vehicles made up 18.14 per cent of the total NSW fleet as at 30 June 2017, however, they contribute disproportionately to the amount of air pollution produced by on-road mobile sources.

On-road mobile sources contribute approximately 62 per cent NO_x and 13 per cent of particle emissions of PM_{10} from all anthropogenic sources in the Sydney¹ region.

Based on projections from the 2008 Air Emissions Inventory for the NSW Greater Metropolitan Region, diesel vehicles currently contribute approximately 55 per cent of NO_x and 87 per cent of exhaust particle emissions (as PM_{10}) from all on-road mobile sources in the Sydney region.

The NSW total diesel vehicle kilometres travelled are increasing due to both the underlying total fleet vehicle kilometres travelled growth, and a trending increase in the proportion of diesel vehicles in the fleet.

With the exception of NO_x emissions for the light vehicle fleet, the total per kilometre PM_{10} and NO_x exhaust emissions from diesel vehicles are predicted to fall significantly from 2011 to 2021, following the introduction of more stringent vehicle emissions regulations combined with fleet turnover.

- For both light and heavy duty diesels, the rate of reduction in PM_{10} emissions is larger than the rate of increase in vehicle kilometres travelled, resulting in decreasing total PM_{10} emissions from the diesel fleet.
- For heavy duty diesel vehicles, NO_x emissions are predicted to decrease from 2011 to 2021, in spite of projected increases in vehicle kilometres travelled.
- For light diesel vehicles, a strong increase in the proportion of diesel vehicles is projected, resulting in large increases in both absolute NO_x emissions, and the percentage contribution to total vehicle fleet emissions.

In March 2017, the NSW Government made formal submissions responding to Commonwealth consultations on Australian vehicle emission and fuels quality standards. The government's submissions supported adopting the latest and most health protective (Euro6/VI) emission standards for light and heavy duty vehicles, and low sulfur (10 ppm) petrol to maximise environmental health benefits. Should this proposal be adopted, there will be significant emission reductions for diesel vehicles into the future.

Smoky vehicles program

In NSW, it is an offence for a vehicle to emit excessive air impurities for a continuous period of more than 10 seconds. In 2016–17 authorised officers issued 74 penalty notices (an average of 6 per month) to the registered owners of diesel vehicles emitting excessive air impurities.

Prosecutions may also occur, usually where a person issued with a penalty infringement notice elects to have the matter heard before a court, or where a smoky vehicle has previously been observed by an authorised officer on a number of occasions. In 2016–17 there were three prosecutions, all involving diesel vehicles.

The public may also report smoky vehicles via the EPA's environment line website or mobile phone application. An average of 154 smoky vehicle reports are received each month from the public (about 1849 public reports over the year), indicating a high level of awareness in the community of the unacceptability of excessive visible emissions.

In 2016–17, the EPA issued 475 advisory letters to diesel vehicle owners based on public reports.

Additionally, 25 defective vehicle notices were issued in 2016–17. A Defective Vehicle Notice requires the vehicle owner to carry out any necessary repairs so that the vehicle no longer emits excessive smoke and to provide evidence to the EPA that those repairs were carried out. Failure to provide evidence that the vehicle is no longer emitting excessive smoke may result in the vehicle registration being suspended.

¹ 'Sydney region' is as defined in the Air Emissions Inventory for the NSW Greater Metropolitan Region, which can be found on the EPA's website www.epa.nsw.gov.au/air/airinventory.htm.

Annual statistics for smoky diesel vehicles

Table 3 shows a breakdown of the percentage of diesel vehicle owners that received fines, advisory or warning letters as a proportion of all vehicles fined.

Table 3: Smoky vehicles—actions taken

	July 07–June 08	July 08–June 09	July 09–June 10	July 10–June 11	July 11–June 12	July 12–June 13	July 13–June 14	July 14–June 15	July 15–June 16	July 16–June 17
Total number of vehicles that received fines	616	373	303	301	186	114	289	78	89	75
Diesel vehicles that received fines	495	351	278	286	173	109	283	76	89	74
Percentage of all vehicles fined that were diesel vehicles	80	94.1	91.7	95	95	96	98	97	100	99
Total vehicles that received advisory and warning letters	755	530	740	750	556	552	891	812	782	957
Diesel vehicles that received advisory and warning letters	103	123	133	135	96	74	462	423	433	475
Percentage of all vehicles that received advisory and warning letters that were diesel vehicles	14	23.2	17	18	17	11	52	52	55	59

There has been a trending reduction in the number of diesel vehicles that received fines, as the EPA has received significantly fewer reports from Roads and Maritime Services of vehicles emitting excessive smoke in the M5 East Tunnel at Earlwood.

Diesel vehicle emission testing and repair program

In the absence of D-NEPM funding, NSW Roads and Maritime Services is no longer delivering a Diesel Vehicle Emissions Testing and Repair program.

Audited maintenance programs for diesel vehicles

The Roads and Maritime Services operates an audited maintenance program known as *Clean Fleet*. This was launched in 2006 and has approximately 7000 vehicles in the program. In the absence of D-NEPM funding, there was no significant change in participation and no training courses held under the program in 2016–17.

State Transit Authority Diesel Bus Upgrade Program

Since 2006 the NSW State Transit Authority has been replacing older diesel buses in the Sydney region (and formerly in the Newcastle region) with Euro 5 standard buses that use AdBlue as a catalyst to reduce emissions of oxides of nitrogen (NO_x). NO_x has known human health impacts, including impacts on the respiratory system, and contributes to the formation of ground level ozone and fine particles. AdBlue is a diesel engine exhaust treatment that is injected into the exhaust stream to convert NO_x into nitrogen gas (N_2) and water vapour (H_2O) by means of chemical reduction.

In 2016–17, 42 diesel buses were replaced with new Euro 5 buses, bringing the overall fleet emissions profile to 80 per cent Euro 3 standard or higher, and 45 per cent Euro 5 or equivalent.

Non-road diesel vehicle programs

Construction industry

In 2016–17 the NSW Office of Environment and Heritage continued to administer the NSW Government Resource Efficiency Policy. The policy includes requirements to address non-road diesel engine emissions through government procurement and contracts. A review of the Government Resource Efficiency Policy requirements is commencing in 2017.

Locomotives

The Diesel Locomotive Fuel Efficiency and Emissions study, completed in December 2016, established baseline exhaust emissions and fuel consumption of General Electric (GE) powered locomotives operating in NSW and compared their emissions against US Tier 0+ locomotive emission standards. This followed a 2015 project that evaluated the emissions and fuel baseline, and impacts of emission upgrade kits, for Electro-Motive Diesel locomotives. More than 90 per cent of locomotives operating in NSW use Electro-Motive Diesel and GE engines. The studies demonstrated that PM emission reductions conforming to US Tier 0+ emission standards can be achieved through emission upgrade kits or other locomotive upgrade programs. Results of these studies will inform policy development for management of emissions from locomotives operating in NSW.

See www.epa.nsw.gov.au/resources/air/diesel-locomotive-emissions-report.pdf.

Victoria

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for Victoria by the Hon Lily D'Ambrosio, Minister for Energy, Environment and Climate Change for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The diesel NEPM in Victoria is administered and implemented by the Environment Protection (Vehicle Emissions) Regulations 2013. These Regulations no longer deal with heavy vehicles over 4.5 tonnes due to the introduction of the Heavy Vehicle National Law that was agreed by COAG in 2009.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

While there are some limitations on the ability to quantify the overall effectiveness of the NEPM-based initiatives implemented to date, it has provided significant value in a number of areas.

The numbers of vehicles reported in the EPA's smoky-vehicle program continue to provide some insight into the high level of community awareness and concern into diesel vehicle exhaust emissions. The continued decline in the number of vehicles reported since the program began in 2005–06 could indicate that there are fewer smoky vehicles being spotted on Victorian roads. Prior to the reporting of heavy vehicles to the National Heavy Vehicle Regulator, there was a significant decline in the proportion of diesel-engine vehicles greater than 1.5 GVM tonnes being reported. This could indicate that there are fewer smoky diesel vehicles in this category.

Smoky vehicles program

The Environment Protection Authority Victoria has operated a public smoky vehicle reporting program for a number of years. This program allows members of the public to identify smoky vehicles (diesel, petrol or LPG) using the '10-second' smoke rule, and report them to the EPA. The Environment Protection Authority also operates an official smoky vehicle enforcement program where the EPA or Victoria Police officers can report vehicles identified as emitting greater than 10 seconds of continuous smoke. As a result of these reports, the owners of the offending vehicles are informed in writing of the report and are requested to have the problem fixed. They are also informed about the penalties that may apply if they are identified by officers from the EPA, VicRoads or the Police. In 2016–17, the program resulted in 1604 smoky vehicle letters being issued for public reports and 139 cautionary letters being issued for official reports.

The following table indicates the number of smoky vehicle letters being sent from the public and official reporting programs over the past twelve years. Generally, there appears to be a downward trend in the number of vehicles being reported over recent years in both programs. The significant drop in reports between 2013 and 2017 may also be affected by systems improvements being made to the program that will become evident over the next couple of financial years.

Table 1: Number of smoky vehicles being reported in the public reporting program and the number of cautionary letters issued under the official smoky vehicle program over the last 11 years.

Year	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14*	2014-15*	2015-16*	2016-17
Number of public reports	10,315	7068	6443	5884	6177	5766	4895	3910	2012	2124	1901	1471
Number of official reports /cautionary letters	1538	849	946	708	445	630	495	554	145	193	95	138

*Note: These numbers include all vehicles in the official program, not just diesel-engine vehicles.

Diesel vehicle reports were not included in past reports between 2013-14 and 2015-16, the above table has been updated to reflect the addition of these.

Diesel vehicle emission testing and repair programs

The Environment Protection Authority Victoria ceased engagement with Vipac (Engineers & Scientists) in 2016 and no longer has an emission testing and repair program.

Audited maintenance programs for diesel vehicles

Victoria does not have an audited maintenance program for diesel vehicles.

Diesel vehicle retrofit programs

Victoria does not have a diesel vehicle retrofit program.

Other programs

Not applicable.

Queensland

Report to the National Environment Protection Council (NEPC) on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for Queensland by the Hon Steven Miles MP—acting Minister for Main Roads, Road Safety and Ports, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The *National Environmental Protection Council (Queensland) Act 1994* provides the framework for implementing the National Environmental Protection (Diesel Vehicle Emissions) Measure (the Diesel NEPM) in Queensland. The Department of Transport and Main Roads is responsible for implementing and reporting on the Diesel NEPM. Queensland has a number of programs in place to ensure air quality is maintained and diesel vehicle emissions are managed appropriately, as specified in the Diesel NEPM. There are no significant issues to report.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Motor vehicles are the main contributor to ambient carbon monoxide concentrations in urban areas. The Environmental Monitoring and Assessment Sciences Division, Department of Science, Information Technology and Innovation is responsible for monitoring air quality in Queensland. There is a network of testing stations around the state containing instruments capable of recording and storing meteorological and air pollutant data. This network includes air monitoring to assess compliance with the standards and goals of the Ambient Air Quality NEPM.

Monitoring at Ambient Air Quality NEPM sites in Queensland during calendar year 2016 showed no exceedances of the Ambient Air Quality NEPM standards for carbon monoxide, nitrogen dioxide, ozone, PM_{2.5} (particles less than 2.5 micrometres in diameter) and lead at any Queensland monitoring station. Sulfur dioxide exceedances of the Ambient Air Quality NEPM standards did occur throughout the period, but were related to industrial emissions, and not diesel engine emissions. A PM₁₀ exceedance was recorded due to a dust storm.

The Australian Government Department of Infrastructure and Regional Development released a discussion paper in February 2016 on vehicle emission standards, and sought public feedback on possible measures to reduce vehicle emissions in Australia. Submissions were received from 80 interested parties. This was followed by the release of three further consultation papers:

- a draft regulation impact statement on improving the efficiency of new light vehicles
- a draft regulation impact statement on strengthening noxious emissions standards for light and heavy vehicles
- a discussion paper on improving fuel quality standards.

The current standard for heavy vehicle emissions, ADR80/03, is based on the Euro V standards, although equivalent US or Japanese standards are accepted as alternatives. Euro VI standards have been adopted in Europe since 2013, and although it is yet to be implemented, there are Euro VI compliant heavy vehicles in use in Queensland. The Australian Design Rules will require all new heavy vehicles to comply with more stringent emission standards and will assist in further reducing the diesel emissions related to road transport in Queensland. There are no timeframes in place around the introduction of Euro VI requirements. The Australian Government's Ministerial Forum on Vehicle Emissions is currently undertaking a review to consider whether Australia should adopt the Euro 6 standards for light vehicles and Euro VI standards for heavy vehicles.

Other programs currently in place to complement the Australian Design Rules and reduce diesel vehicle emissions are described below.

Smoky vehicles program

The smoky vehicle hotline provides the community with an avenue for reporting vehicles exceeding the ten-second smoke rule, via the internet or telephone. Following a data match of the information provided, a letter is sent to the owner advising them of the report and suggesting ways to identify and remedy the problem. If the vehicle is

reported three times within a four month period, the owner is issued with a Present Vehicle Order which requires their vehicle to be checked for defects by a transport inspector.

From 1 July 2016 to 30 June 2017, 2138 vehicles were reported to the Department of Transport and Main Roads' smoky vehicle hotline. Most vehicles, 1870 (87 per cent) were reported through the online form, with the remaining 268 vehicles (13 per cent) reported by phone. The number of vehicles reported has increased by 18 per cent compared to 2016, when 1805 vehicles were reported. Online reporting increased from 81 per cent to 87 per cent.

Of the 2138 vehicles reported, 811 (38 per cent) were diesel powered vehicles. This is a slight fall from the previous reporting period when 42 per cent were diesel powered vehicles. It was noted in the 2016 report that the number of diesel powered vehicles reported had increased with more than twice the number of diesel vehicles reported than the previous year. The slight falls in residential construction between 2016 and 2017 may explain this change in the trend.

The Department of Transport and Main Roads does not have the technology to test emissions of reported diesel vehicles, so there is no data retained beyond the number of diesel vehicles reported to the smoky vehicle hotline. The Department of Transport and Main Roads issued 184 initial warning letters and 11 secondary warning letters requesting that drivers have their vehicles checked. No Present Vehicle Orders were issued to diesel powered vehicles during this time.

Increased uptake in diesel vehicles

Diesel vehicle emissions are expected to continue to decrease moderately through fleet turnover, as higher polluting older heavy vehicles are replaced with newer, less polluting heavy vehicles. The gradual tightening of emission standards to harmonise with European Union standards is considered one of the most cost effective means to reduce diesel emissions and improve air quality.

The ABS noted in the 2017 Motor Vehicle Census that diesel vehicles remained a popular choice in 2017, with 67,160 (6.9 per cent) more diesel vehicles registered in Queensland than in 2016. This was slightly less than the 8.1 per cent increase in diesel vehicle registrations nationally. During the same period the number of petrol powered vehicles registered in Queensland increased by 28,258, an increase of 1 per cent compared to the previous year.

Over a five year period, diesel powered vehicles have increased by 48.8 per cent, compared to 4.3 per cent for petrol powered vehicles. The number of heavy vehicles registered in Queensland during this period rose from 102,278 to 109,181 a 6.7 per cent increase (6,903 vehicles), indicating the majority of growth in diesel vehicles in Queensland has not been in the heavy vehicle sector.

Brisbane City Council has around 1200 buses in their fleet, with almost half running on compressed natural gas. Whole of life costs for compressed natural gas are no longer favourable compared to diesel buses due to the cost of technology and the additional safety risks, while diesel technology can now achieve Euro VI standards, eroding the initial advantage of compressed natural gas. There is now no second hand market for compressed natural gas buses, which need considerable refuelling infrastructure to be successfully implemented.

Council uses new generation, high-efficiency enhanced environmentally-friendly vehicle diesel engine technology for all new buses. Four Volvo B8 Euro VI buses were delivered in early 2017, while a Volvo B5 diesel-electric hybrid bus provides services on the City Loop route. Recent bus purchases by the Queensland Government and Brisbane City Council have been clean diesel (enhanced environmentally-friendly vehicles). This is an example of the return to diesel from fuel sources that were previously considered to be preferable, either in terms of efficiency, emissions, or economics.

Diesel vehicle emission testing and repair programs

The Department of Transport and Main Roads operates a compulsory programmed inspection regime for heavy vehicles registered in Queensland. The standard of muffler and exhaust on the vehicle is checked at this inspection, and any vehicle with a faulty muffler is issued with a defect notice to have it repaired or replaced. Heavy vehicles are inspected every twelve months, prior to renewal of registration, public passenger vehicles, such as buses, are inspected every six months.

The Department of Transport and Main Roads inspected 46,145 heavy vehicles, while private accredited inspection stations inspected 51,996 heavy vehicles in the 2016–17 financial year. These totals include rigid heavy vehicles, prime movers and buses. The programmed inspection ensures defective engine performance, which contributes to increased diesel emissions, can be identified and repaired.

In Queensland, the Brisbane City Council owns and operates the only facility for testing diesel powered heavy vehicles for emissions under the DT80 emission testing regime. During the 2016–17 financial year the council tested a 17 diesel powered vehicles, all manufactured after December 1995 and complied with ADR/70 emission standards or later. None of the vehicles were tested to verify compliance in order to claim credits under 'criterion 3' of the fuel tax credit scheme.

All the diesel powered vehicles tested passed, representing one hundred percent compliance for the last three years. Of the 44 heavy vehicles tested, 41 were previously untested vehicles. Additionally, 20 of the previously untested vehicles came from the council's own fleet. The other 21 vehicles were made available from external operators, indicating that there continues to be limited uptake of DT80 emission testing in Queensland. A DT80 test costs \$679+GST, which may be a contributing factor.

Brisbane City Council is of the view that regular ongoing vehicle maintenance is critical to maintaining satisfactory vehicle emissions performance. Education of vehicle owners on the value of regular vehicle servicing and maintenance would contribute to ensuring vehicles contribute to comply with emission requirements beyond the point of supply to the market. Expanding the availability of, or increasing access to, vehicle emission testing facilities (via grants, incentives, or subsidies) may also contribute to ensuring vehicles continue to comply with emission requirements beyond the point of supply to the market.

Council has noted that establishing an emissions test standards that allows for reasonable engine deterioration is also required to fairly evaluate in service performance. The current DT80 test is not comparable to the Euro standard vehicles, so a new compatible test protocol is required.

Audited maintenance programs for diesel vehicles

The Queensland Government encourages owners and operators of heavy vehicles to participate in the National Heavy Vehicle Accreditation Scheme, now administered by the National Heavy Vehicle Regulator. The scheme gives heavy vehicle owners more responsibility for servicing their vehicles and ensuring they are compliant with maintenance accreditation requirements. Compliance with an accredited maintenance management scheme provides a concession to the requirement for an annual inspection in Queensland and the requirement to provide a Certificate of Inspection prior to registering vehicles.

There are 36,952 (2016: 36,483) Queensland registered heavy vehicles participating in the NHVAS maintenance scheme and 842 (2016: 825) operators accredited in Queensland, representing a 1.3 per cent increase on last year's NHVAS accreditations. Whereas 2016 saw a decrease, attributed to fleet consolidation, 2017 data shows a growth in accredited operators. Most vehicles participating in the National Heavy Vehicle Accreditation Scheme use diesel fuel.

Biofuel Mandate Program

From 1 January 2017, a mandate requires liable fuel sellers to sell a minimum amount of bio-based petrol (3 per cent), such as E10, and bio-based diesel (0.5 per cent) in Queensland. Biodiesel is a blend of mineral diesel and biodiesel, which has been made from vegetable oils such as canola, animal fats or recycled greases, and has been shown in some studies to contain reduced levels of sulfur. As the program is still in the early stages and uptake has been limited, it is not possible to assess the full impacts of the program.

Diesel vehicle retrofit programs

There were no diesel retrofit programs operating in Queensland during the reporting period.

Other programs

Queensland is continuing to support the introduction of innovative, higher productivity heavy vehicles through performance based standards which allow for vehicles to comply based on performance rather than prescriptive standards. Performance based standards vehicle combinations equate to fewer heavy vehicles, less congestion and better safety outcomes on the network. Under some circumstances in Queensland, performance based standards heavy vehicles (A-doubles) have halved the number of trips for certain freight tasks. Increased capacity through smart performance based standards design is improving efficiency, increasing diesel fuel savings and reducing associated emissions.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for Western Australia by the Hon Albert Jacob, MLA Minister for Environment; Heritage (21 March 2013 to 16 March 2017) and the Hon Stephen Dawson, MLC Minister for Environment; Disability Services (17 March 2017 to 30 June 2017) for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

On 1 July 2017, the Western Australian Department of Environment Regulation was amalgamated with two other departments: the Department of Water and the Office of the Environment Protection Authority and was renamed the Department of Water and Environmental Regulation.

In Western Australia, the National Environment Protection (Diesel Vehicle Emissions) Measure (Diesel NEPM) is implemented by the Department of Water and Environmental Regulation under the *National Environment Protection Council (WA) Act 1996* and the *Western Australian Environmental Protection (WA) Act 1986*.

Vehicle emissions in Western Australia are regulated under the Road Traffic (Vehicles) Act 2012 and Road Traffic (Vehicles) Regulations 2014, which are administered by the Department of Transport. The 'ten-second rule' in the regulations is the primary mechanism used to target visually polluting diesel and petrol vehicles.

In addition to smoky vehicle regulation, the Department of Water and Environmental Regulation operates a remote sensing device that measures on-road vehicle emissions and provides immediate feedback to drivers on their vehicle emissions relative to the wider vehicle fleet. The data collected by the remote sensing device is used to track emission trends from vehicle groups of concern and inform vehicle policy development.

The Western Australian Government's Perth Air Quality Management Plan aims to ensure that clean air is achieved and maintained throughout the Perth metropolitan region. The management plan identifies that the management of emissions from in-service petrol and diesel vehicles is critical to achieving clean air, and contains a range of initiatives that target on-road vehicles. The implementation of vehicle emissions reduction initiatives in the Air Quality Management Plan are largely complementary to the outcomes of the Diesel NEPM.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The Department of Water and Environmental Regulation undertakes roadside monitoring to assess the health of the Perth vehicle fleet. No monitoring was undertaken in the 2016–17 reporting year. The CleanRun On-Road Vehicle Emissions Monitoring Report 2016 for monitoring undertaken during March and April 2016 was published in January 2017 and is available at www.dwer.wa.gov.au/images/documents/our-work/programs/cleanrun/Cleanrun_on-road_vehicle_emissions_monitoring_16.pdf.

Western Australia does not have in-service emissions standards to be able to compare remote sensing device sampling results.

Implementation of vehicle emissions reduction initiatives of the Air Quality Management Plan and the CleanRun Program are the foundation of vehicle emissions reduction strategies undertaken by the Department of Water and Environmental Regulation. The Department will continue to work with the Department of Transport, other government agencies and industry associations to investigate and implement motor vehicle related policies and management actions where appropriate to reduce the impact of diesel vehicle emissions in Western Australia.

Smoky Vehicles Program

In 2016–17 the Smoky Vehicle Reporting Program received 480 reports, which is an average of 40 reports per month, representing a five per cent increase in reports from 2015–16.

Prior to contacting reported vehicles, the Department of Water and Environmental Regulation and the Department of Transport verify reports by comparing reported vehicle details against the Department of Transport vehicle

registration database, discarding reports if details do not match. Advisory letters (424) were sent to reported vehicle owners in 2016–17 (with an 88.3 per cent valid report rate).

Of the 424 letters issued, 305 responses were received (71.9 per cent return rate)². Table 1 summarises the responses received for vehicles reported from July 2016 to June 2017.

Table 1: Responses from owners of reported vehicles

Response	2014–15	2015–16	2016–17
Reports received	268	455	480
Letters sent	N/A	372	424
Responses received	146	282	305
Vehicle repaired	57 (48%)	127 (45.0%)	145 (47.5%)
Vehicle does not smoke	45 (38%)	90 (31.9%)	99 (32.5%)
Can't afford to repair	1 (<1%)	3 (1.1%)	6 (2.1%)
Disposed of vehicle	3 (2%)	8 (2.8%)	17 (5.6%)
Wrong vehicle	6 (5%)	11 (3.9%)	19 (6.5%) ³
Other	8 (7%)	40 (14.2%)	19 (6.5%)
Petrol	35 (30%)	57 (20.2%)	52 (17.0%)
Diesel	71 (60%)	194 (68.8%)	217 (71.1%)
LPG	2 (<2%)	1 (0.4%)	0 (0%)
Fuel type not reported	13 (11%)	30 (10.6%)	36 (11.8%)

Response data is seen to be consistent over the last three reporting years with just under half of the responses indicating they had carried out repairs on their vehicle after receiving the letter and about one third advising their vehicle was not in breach of the 10 second rule.

Diesel vehicles continue to represent the most significant vehicle group reported, with the proportion of petrol vehicles reported falling each year.

In 2016–17, 16 vehicles were reported on more than one occasion. No vehicles were reported more than twice. Six of these vehicles advised the vehicle was being investigated for repairs, two advised the vehicle was not smoky, and two advised they had disposed of their vehicle since being reported. Six vehicles did not provide a response to their second letter.

Diesel vehicle emission testing and repair programs

The Department of Water and Environmental Regulation operates a remote sensing device that provides an efficient, cost effective method of characterising vehicle emissions and raising community awareness of vehicle emissions.

The remote sensing device was not deployed in the 2016–17 reporting year.

Audited maintenance programs for diesel vehicles

The National Heavy Vehicle Accreditation Scheme encourages heavy vehicle operators to take responsibility for servicing their vehicles and ensuring vehicles are compliant with scheme accreditation requirements.

² At the time of reporting June reports had been sent to vehicle owners with the last of the responses still being received. Actual return rate will be slightly higher than reported, but still similar.

³ A mailing error resulted in several vehicle owners receiving incorrect vehicle details (though registration and location details were still correct). Outside this event, only one wrong vehicle response was received.

In Western Australia, operators of certain types of heavy vehicles must become accredited to gain a permit or notice from Main Roads Western Australia. The majority of these vehicles use diesel as their primary fuel source. Western Australian Heavy Vehicle Accreditation is mandatory for individuals and organisations which require a permit or notice to perform any transport task as part of a commercial business or for profit within Western Australia, including interstate operators.

There are currently two accreditation modules, Fatigue and Vehicle Maintenance, which operators are required to incorporate into their daily work practices. Maintenance management encourages heavy vehicle operators to take responsibility for servicing their vehicles regularly and ensuring their vehicles are safe at all times. The standards for this module are similar to that required under the nationally endorsed National Heavy Vehicle Accreditation Scheme.

Accredited operators must ensure their vehicles are maintained and meet all relevant safety standards. A record of the maintenance and servicing work done to each vehicle must be kept to prove the vehicles are safe at all times.

Compliance and enforcement activities are key factors in ensuring effective and safe management of heavy vehicles on the road network. Transport inspectors in Western Australia are authorised by law to intercept and inspect vehicles for roadworthiness, load security and vehicle licencing conditions. Compliance also performs the important role of educating and working with the transport industry and other agencies and stakeholders to improve standards.

Diesel vehicle retrofit programs

The Western Australia government does not operate a diesel vehicle retrofit program.

Other programs

Communication

The CleanRun Program was developed to make the overall vehicle emission reduction actions immediately identifiable and to facilitate the promotion of key Diesel NEPM messages in Western Australia. Web pages, fact sheets and brochures are developed and produced to provide information on the CleanRun Program. These documents are available on the Department of Water and Environmental Regulation's website www.dwer.wa.gov.au/our-work/programs/162-cleanrun. Attention continues to focus on promoting Diesel NEPM messages through established programs.

CleanRun EcoDrive

The CleanRun EcoDrive program aims to reduce diesel emissions by encouraging driver behaviour change.

CleanRun EcoDrive provides a resource package for fleet operators to reduce fuel use and related emissions by working with drivers to make small changes to their driving habits. Eco driving incorporates a number of safer, smarter driving techniques that maximise fuel economy by operating the engine as efficiently as possible.

The package includes the resources to develop an EcoDrive training program in-house, including driver training materials developed by experts in the transport industry. It is estimated that fleet operating organisations who implement the CleanRun EcoDrive program can reduce fuel use and related emissions by up to 20 per cent. All resources are available to download free-of-charge from the Department of Water and Environmental Regulation's website www.dwer.wa.gov.au/our-work/programs/161-cleanrun-ecodrive. The Department worked with industry partners to develop the resources.

South Australia

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for South Australia by the Hon Ian Hunter MLC, Minister for Sustainability, Environment and Conservation, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

In South Australia, the National Environment Protection (Diesel Vehicles Emissions) Measure (Diesel NEPM) became an Environment Protection Policy under the repealed Section 28A of the *Environment Protection Act 1993*. Section 4 of the transitional provisions in the *Environment Protection (Miscellaneous) Amendment Act 2005*, Schedule 1, enables the continued operation of the Diesel NEPM as an environment protection policy.

The South Australian Government made provision to regulate emissions from diesel vehicles under the Road Traffic (Vehicle Standards) Rules 1999: Rule 147A Exhaust Emissions—diesel-powered vehicles. Rule 147A set emission limits for NO_x and particulate matter for diesel vehicles that are in service.

The 10-second smoke rule regulated as Rule 147 in Road Traffic (Vehicle Standards) Rules 1999 has also been applied as an in-service standard towards the achievement of Diesel NEPM outcomes.

National Heavy Vehicle Law was enacted in South Australia in 2013 including adoption of the national regulations. Rule 96 of the Heavy Vehicle (Vehicle Standards) Regulation continues the existing diesel emission standard for South Australian heavy vehicles (in addition to requiring heavy vehicles in each participating jurisdiction to comply with the standard).

Compliance with Rule 147A & Rule 96 was previously tested at the Regency Park Vehicle Inspection Emissions Test Facility, however the facility has now been closed due to high maintenance costs and low throughput of vehicles. Arrangements are still being sought to undertake this testing within the private sector. When a testing service is identified and operational, vehicles that fail the emissions test will be defected, and then required to submit for re-testing for compliance with the standard.

South Australian police patrols are the primary means for the detection of vehicles exceeding the 10-second smoke rule. During the reporting period, no diesel vehicles were reported by SA Police to the Department for Planning, Transport and Infrastructure for the assessment of corrective actions.

South Australia had demonstrated a strong commitment to biodiesel use in its government owned public transport bus fleet for over a decade, with buses operating on either B5 or B20. This came to an end in early 2016 with the closure of Australian Renewable Fuels. Biodiesel use in Adelaide's bus fleet will likely resume if and when a new cost-effective regional supply of biodiesel to fuel quality standard is achieved.

While the Environment Protection Authority has responsibility for leading South Australia's response to this NEPM, the Department of Planning Transport and Infrastructure is investigating and developing relevant strategies for the management of emissions from diesel vehicles.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The Regency Park Emissions Test Facility was closed during the 2013–14 financial year due to high maintenance costs and reliability issues. Private sector providers are being sought to provide alternative emissions testing services including diesel emissions.

Smoky Vehicles Program

Not applicable.

Diesel vehicle emission testing and repair programs

Not applicable.

Audited maintenance programs for diesel vehicles

Not applicable.

Diesel vehicle retrofit programs

Not applicable.

Other programs

The South Australian Government has funded the building of two new full battery electric buses by a consortia of companies (Precision Engineering, Bus Tech and ZF Lemforder) in northern Adelaide. They will now be trialled in the metro bus fleet with a focus on City Connector bus services (free loop around the City of Adelaide).

The government has also committed funding in the 2017–18 Budget for the establishment of a ‘green’ hydrogen refuelling station and the trial of at least six hydrogen fuel cell buses on the Adelaide Metro network. The supply of both the refuelling station, which will produce hydrogen by the hydrolysis of water using 100% renewal electricity, and the supply of the fuel cell buses is currently underway. The refuelling station is also expected to support a range of other light and heavy fuel cell vehicles in Adelaide.

The government has set a target of 30 per cent low emission vehicles in its own fleet by 2019, which is on track to be achieved ahead of schedule. While this will likely be met by a mix of full hybrid and small capacity turbocharged engine vehicles, it includes the uptake of plug-in hybrids. Further opportunities to take up full battery electric vehicles are being explored.

The government together with the Adelaide City Council and a range of private stakeholder, will oversee a significant roll out of new electric vehicle charging infrastructure in Adelaide in 2017–18. This will comprise AC (Type 2 Mennekes 22kw), DC Fast (CHAdeMO and CCS2) and Tesla SuperChargers.

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for Tasmania by Hon Elise Archer MP, Minister for Environment and Parks for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

Under Section 12A of the *Tasmanian State Policies and Projects Act 1993*, National Environmental Protection Measures made under Section 14(1) of the *National Environment Protection Council (Tasmania) Act 1995* are taken to be State Policies which have been passed by both Houses of Parliament.

In 2006 and 2007, a contract between the then Department of Tourism, Arts and the Environment and the Australian Government Department of the Environment and Water Resources facilitated the funding of a series of diesel engine skill gap training workshops in the south, north and northwest of the state. Funding provided for the purchase of diesel emissions testing equipment and the delivery of free three-hour training courses for 321 qualified mechanics.

Since the end of this program the Tasmanian TAFE has continued to utilise this equipment in training courses for automotive apprentices. The equipment is used in both training and commercial activities to test the operation and repairs of emission controls /devices on vehicles and to check the emission outputs of liquefied natural gas and compressed natural gas conversions. However, the equipment has not been used for commercial purposes during this period.

A limitation of the equipment is that it is not certified to perform the DT80 emission test. The DT80 test is the Australian Transport Council's in-service emission standard for diesel vehicles

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

As of 30 June 2017, there were 13,516 diesel powered heavy vehicles (that is vehicles over 4.5 tonnes) and 114,055 diesel powered light vehicles registered in the state. This represents an increase of 3.1 per cent and an increase of 9.0 per cent since 1 July 2016. Of the total of 603,839 vehicles registered in Tasmania on 30 June 2017, 21.1 per cent were diesel powered.

Smoky Vehicles Program

The Department of State Growth maintains a strong focus on road safety rather than on vehicle emissions. They do not possess vehicle emission measurement facilities, and do not actively target vehicle emissions.

They do however utilise the 'ten second rule' for smoky exhausts and issue traffic infringement notices requiring identified vehicles to undergo servicing to reduce smoke emissions. Traffic infringement notices for smoky exhausts are issued by departmental vehicle inspection officers and can also be issued by the police.

Records are not compiled showing the number of traffic infringement notices issued for smoky vehicles.

Diesel vehicle emission testing and repair programs

The Department of State Growth does not possess vehicle emission measurement facilities, and do not compile records of vehicle testing or repairs.

Audited maintenance programs for diesel vehicles

There is no audited maintenance program for diesel vehicles in Tasmania.

Diesel vehicle retrofit programs

Statistics are not compiled on diesel vehicle retrofitting

Other programs

There were no other programs implemented during the reporting year to manage emissions from in-service diesel vehicles.

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for the Australian Capital Territory by Mr Mick Gentleman MLA for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The Australian Capital Territory's (ACT) Road Transport (Vehicle Registration) Regulation 2000 requires emission control systems supplied by vehicle manufacturers to remain fitted and functional. This is consistent with the goals in the National Environment Protection (Diesel Vehicle Emissions) Measure (the NEPM).

Aggregate air quality data indicates that air pollution caused by diesel emissions is not a significant contributor to the urban airshed in the ACT. So no actions are taken in the ACT as a result of measures against the NEPM.

Notwithstanding the above, the ACT has introduced a number of measures consistent with achieving the goals of the NEPM, including:

- adoption of the Australian Design Rules, as requirements under Schedule 1 of the Road Transport (Vehicle Registration) Regulation 2000
- requiring emission control equipment fitted to a vehicle to remain fitted and be maintained in a condition to ensure it operates essentially in accordance with the systems original design under Schedule 1 of the Road Transport (Vehicle Registration) Regulation 2000
- implementation of random on-road and car park inspections
- implementation of arrangements enabling members of the community to report vehicles that they consider unroadworthy, including those that emit excessive smoke, and enabling appropriate action against those vehicles
- ACT Government subscription to Greenfleet for the planting of trees to offset its vehicles fleet emissions
- supporting ACT representation on the fuel standards consultative committee.

While statistics on the number of inspections and how many defects and warnings are collected, at this stage, the reasons for these enforcement actions are not collated. In general, ACT inspectors would not normally issue an infringement notice to a vehicle emitting excessive smoke. The ACT has found it more beneficial to require a vehicle to be repaired than to impose a monetary penalty. Issuing a monetary penalty is likely to delay repairs or make it more difficult for owners to repair their vehicles.

In addition to the above, Transport Canberra took delivery of an additional 22 Euro VI buses in 2016–17. A total of 95 Euro VI buses have been delivered as at June 30, 2017. A fleet of 70 CNG powered buses, purchased between 2004 and 2008, also remains in service.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

As indicated above, the ACT airshed quality does not approach the NEPM trigger points and therefore no action is taken within the ACT as a result of the NEPM. As such, the NEPM has limited effectiveness within the ACT.

Therefore, the programs identified under the NEPM are not applicable within the ACT as any actions taken in relation to diesel vehicles are as a result of the overriding road transport laws that apply standards to individual vehicles based on type, age and roadworthiness.

Smoky Vehicles Program

Not applicable.

Diesel vehicle emission testing and repair programs

Not applicable.

Audited maintenance programs for diesel vehicles

Not applicable.

Diesel vehicle retrofit programs

Not applicable.

Other programs

Not applicable.

Northern Territory

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for Northern Territory by the Hon Lauren Moss Minister for Environment and Natural Resources for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

Aggregate data on diesel emissions for the Northern Territory is not available. However, air quality studies and the National Pollutant Inventory indicate that motor vehicle traffic is not a major contributor to air emissions in the larger urban areas.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

A number of initiatives are implemented to control diesel vehicle emissions in the Northern Territory. Vehicle standards are enforced through the general provisions of the *Motor Vehicles Act* (NT) and the Australian Vehicle Standard Rules which require all vehicles to comply with Australian Design Rules when in service.

In the Northern Territory, there are about 63,000 diesel vehicles registered, representing around 39 per cent of the total vehicle fleet, which is much higher than the national level of diesel vehicles which is approximately 22 per cent of the vehicle fleet. Australian Bureau of Statistics data indicates that diesel vehicles registered in the Northern Territory represent about 1.4 per cent of all diesel vehicles in Australia.

Of the four major regions in the Territory, 69 per cent of all diesel vehicles registered in the Northern Territory are registered in the Darwin region, while 15 per cent are registered in Alice Springs, 8 per cent in Katherine and 2 per cent in Tennant Creek.

In the Darwin region about 36 per cent of all registered vehicles are diesels—this is lower than in Alice Springs, with diesels representing 39 per cent of the total vehicle fleet. In Katherine and Tennant Creek the diesel portion of the total fleet is 54 per cent and 57 per cent respectively, indicating a higher reliance on diesel vehicles in remote areas.

Of the heavy vehicle diesels registered in the Northern Territory, 63 per cent are registered in the Darwin region, 19 per cent in Alice Springs and 10 per cent in Katherine. The distribution of light diesel vehicle registrations in the Territory differs slightly, with 70 per cent of all light diesel vehicles registered in the Darwin region, 14 per cent in Alice Springs and 8 per cent in Katherine.

Smoky Vehicles Program

A smoky vehicle program is undertaken as part of the Northern Territory's vehicle registration and roadworthiness testing procedures. Records of diesel vehicles issued with defect orders show that only a minor fraction of vehicles checked as part of the vehicle registration process receive a defect notice due to engine smoke.

Diesel vehicle emission testing and repair programs

Pollutants associated with diesel emissions in the Territory are well below emission standards. As a result, the current air quality conditions are not considered a trigger for change in relation to managing diesel emissions. The Northern Territory will continue to monitor the need for action on diesel emissions and will take appropriate action as required.

Audited maintenance programs for diesel vehicles

Vehicle roadworthy inspections are undertaken periodically for light and heavy vehicles and these inspections include checking that all required emission control equipment is fitted as well as the detection of smoky vehicles. Periodic roadworthy inspections are required at registration renewal and the frequency of inspections is determined by the vehicle type, age and category. Since 1 July 2013, light vehicle inspections are required at five years, 10 years and then annually. All heavy vehicles require an annual roadworthy inspection.

Diesel vehicle retrofit programs

The majority of the Northern Territory road train fleet is less than five years old and employs the latest technology in engine management systems to minimise fuel consumption. On a payload per emission basis, road trains operating line haul operations in remote Australia are considered to be some of the most environmentally efficient road freight vehicles in the world.

Other programs

The Northern Territory's open access policy provides for 'as of right' access for road trains and 100 per cent network access for vehicles operating at higher mass limits. The Northern Territory's innovative vehicle policy also promotes the development of high productivity innovative vehicle combinations which can deliver further efficiency benefits.

Appendix 5:
Jurisdictional reports on
the implementation and
effectiveness of the Movement
of Controlled Waste between
States and Territories
National Environment
Protection Measure

Commonwealth

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure for the Commonwealth by the Hon Josh Frydenberg MP, Minister for the Environment and Energy, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The Commonwealth continues to support the Movement of Controlled Waste NEPM through activities conducted as part of the national hazardous waste reform program. In the 2016–17 year, key activities related to the NEPM included:

- developing the *Hazardous Waste in Australia 2017* report on the generation, types, amounts, pathways and fates of hazardous and controlled wastes in Australia. This included a detailed investigation of interstate movement data and recommendations for how tracking systems and tracking system data could be improved.
- continuing work towards a possible national electronic tracking system for inter and intra state movements of hazardous and controlled waste. Documentation detailing requirements was developed for a common data storage and common electronic tracking certificate. Options for ending paper-based certificates were identified. The jurisdictions without electronic tracking (ACT, Northern Territory and Tasmania) were provided assistance in support of trialling electronic tracking. The feasibility of rolling out Waste ID/Waste Locate as a national system for tracking waste tyres was also investigated.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Not applicable for the Commonwealth.

New South Wales

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure for New South Wales by the Hon Gabrielle Upton, Minister for the Environment, Minister for Local Government, and Minister for Heritage for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

While the NEPM has been in place for more than 10 years, its implementation remains challenging. This is mainly due to the continued existence of a paper-based tracking system, and data quality issues in the online tracking system. Minor changes to the NEPM recommended following the 10-year review were implemented in NSW in October 2014 under the Protection of the Environment Operations (Waste) Regulation 2014.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Irrespective of implementation issues, the NEPM provides an effective tool in minimising the potential for adverse impacts associated with the movement of controlled waste on the environment and human health. A total of 404,012 tonnes of controlled waste in 59,603 movements were reported this period as having been transported into NSW (Tables 2 and 4).

Please note, a data cleanse of the transport certificates has not yet been completed, so final amounts may vary from the time of reporting. Also, discrepancies in excessive waste amounts of transport certificates are still being investigated.

Table 1: Number of consignment authorisations issued by New South Wales

Reporting year	Consignment authorisations issued
2015–16	16,560
2016–17	13,789*

*Data cleanse has not been completed, therefore actual figure may not be correct at the time of reporting.

Table 2: Quantity of controlled waste into New South Wales for the period 1 July 2016 to 30 June 2017—tonnes per waste category by state/territory

Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total (tonnes)
A	Plating and heat treatment	14.44	0	1.38	0	0.76	0	0	0	16.58
B	Acids	5757.27	20,068.11	0	0	48.48	0	0.42	0	25,874.28
C	Alkalies	11,530.65	73.52	62.67	1.22	0	0	0.58	0	11,668.64
D	Inorganic chemicals	77,407.1	7795.16	5816.15	5818.4	3679.78	0	12.3	361.45	100,890.3
E	Reactive chemicals	71.23	1.8	9.57	0	0	0	0.08	0	82.68
F	Paints, resins, inks, organic sludges	9623.97	1697.83	313.28	20.64	155.07	0	23.33	0	11,834.12
G	Organic solvents	2933.74	74.35	92.53	128.32	27.04	0	21.09	0	3277.07
H	Pesticides	211.57	0.4	0	2.7	5	0	0.33	0	220
J	Oils	104,595.7	2411.8	125.86	126.47	115.34	21.3	2946.05	117.01	110,459.6
K	Putrescible/organic waste	1229.89	2714.72	0	0	0	0	6525.33	0	10,469.94
L	Industrial washwater	0	0	0	0	0	0	0	0	0
M	Organic chemicals	10,485.65	235.09	220.81	8.09	125.08	0	19.92	0	11,094.64
N	Soil / sludge	94,701.04	2261.56	1509.71	3.35	6.89	0	165.53	0.2	98,648.28
R	Clinical and pharmaceutical	14,186.78	0.45	0	0	0	0	342.01	0	14,529.24
T	Misc.	4105.29	429.76	182.08	0.09	0	0	229.41	0	4946.63
State Totals (tonnes)		336,854.4	37,764.55	8334.04	6109.28	4163.44	21.3	10,286.38	478.66	40,4012

Table 3: Discrepancies in movements of controlled waste into New South Wales for the period 1 July 2016 to 30 June 2017—percentage of total movements

Discrepancy type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
Consignment non-arrival	0.457	0.777	1.923	0.55	0	0	1.57	0.54	
Transport without authorisation									
Non-matching documentation									
Waste data	0.637	0.621	1.036	1.1	0	0	0.188	0	

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 4: Number of movements of controlled waste into New South Wales for the period 1 July 2016 to 30 June 2017

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
54,474	1931	676	727	175	1	1592	27	

* Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Victoria

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure for Victoria by the Hon Lily D'Ambrosio, Minister for Energy, Environment and Climate Change for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The NEPM is implemented in Victoria by the Waste Management Policy (Movement of Controlled Waste between States and Territories). There continues to be close consultation between the state and territory agencies, established under the NEPM agreement. However, there continues to be a decline in compliance by the waste industry.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

In the 2016–17 reporting period, Victoria issued 312 authorisations. This is a decrease of 39 approvals from the previous year. Most authorisations were for the recycling and energy recovery of controlled waste.

The total amount of controlled waste that was brought into Victoria during the reporting year was 35,619 tonnes. This was an increase of 6780 tonnes from the amount reported in 2015–16.

Due to the continuing implementation of the EPA's new integrated information management system, the data for discrepancies in movements of controlled waste into Victoria in 2015–16 (refer to table 3 below) remains unavailable at the time of reporting.

Inorganic chemicals remain the largest percentage of the total tonnage transported to Victoria in 2016–17. The inorganic chemicals waste stream, consisting of metallic constituents, accounted for 35 per cent of the total volume in 2016–17.

In 2016–17, the EPA Victoria again focused on the transportation of industrial waste from Victoria to both limit the possibility of the movement of waste from Victoria and ensure that Victorian waste is taken to permitted facilities in Victoria. This is a multi-faceted strategy that targets generators, consignors and transporters of industrial waste. Victoria will continue to work with our counterparts in NSW and Queensland to deliver it.

Table 1: Number of consignment authorisations issued by Victoria

Reporting Year	Consignment authorisations issued
2015–16	351
2016–17	312

Table 2: Quantity of controlled waste into Victoria for the period 1 July 2016 to 30 June 2017—tonnes per waste category by state/territory

Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*	Total (tonnes)
A	Plating & heat treatment	0		0	0	0	1	0	0		1
B	Acids	113		2	3	1	29	0	0		148
C	Alkalis	113		4	0	4	11	0	0		133
D	Inorganic chemicals	468		63	10669	235	1019	0	201		12655
E	Reactive chemicals	7		0	0	0	0	0	0		8
F	Paints, resins, inks organic sludges	3656		871	245	267	17	0	0		5056
G	Organic solvents	701		140	170	312	77	0	0		1400
H	Pesticides	243		99	382	0	0	0	0		725
J	Oils	2854		521	93	35	153	0	0		3656
K	Putrescible/organic waste	2260		5	12	74	0	12	0		2363
L	Industrial washwater	948		6	0	28	0	0	0		982
M	Organic chemicals	258		8	2	16	46	85	0		413
N	Soil/sludge	5600		1	58	27	344	0	0		6029
R	Clinical & pharmaceutical	498		864	63	313	2	0	3		1743
T	Misc.	245		1	19	21	20	0	0		306
State Totals (tonnes)		17963		2585	11715	1334	1720	97	205		35619

Table 3: Discrepancies in movements of controlled waste into Victoria for the period 1 July 2016 to 30 June 2017—percentage of total movements

Discrepancy type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
Consignment non-arrival	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Transport without authorisation	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Non-matching documentation	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Waste data	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 4: Number of movements of controlled waste into Victoria for the period 1 July 2016 to 30 June 2017

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
1842		162	593	378	173	7	13	

* Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure for Queensland by the Hon Steven Miles MP, Minister for Environment and Heritage Protection and Minister for National Parks and the Great Barrier Reef for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The Queensland Department of Environment and Heritage Protection is responsible for the administration of the National Environmental Protection (Movement of Controlled Waste between States and Territories) Measure (NEPM) in Queensland. The NEPM is implemented under the *Environmental Protection Act 1994* (EP Act) through Chapter 5, Part 9 of the Environmental Protection Regulation 2008⁴. As per the NEPM, the regulation includes provisions in relation to obligations for the tracking of controlled waste into and out of Queensland, as well as requirements for the prior approval of consignments of controlled waste being transported into Queensland.

Legislative requirements for the licensing of controlled waste transporters are included in the Environmental Protection Act and detailed in Schedule 2 of the Environmental Protection Regulation. The NEPM administration is integrated with intrastate tracking, controlled waste licensing and compliance activities in Queensland.

- The Department of Environment and Heritage Protection has continued to administer the NEPM to help ensure controlled waste is managed appropriately. The prior approval process through consignment authorisation and consultation with other jurisdictions and waste handlers has helped to ensure controlled waste is consigned to appropriate facilities.
- The total number of applications for consignment authorisation (Table 1) approved for the 2016–17 year was 300, which is a 4.5 per cent increase from the 2015–16 year (287). A large number of applications were received at the start of the 2016–17 year with 45 applications received in July 2016.
- There was an increase in the amount of controlled waste transported into Queensland from other Australian states and territories. The total amount of waste transported into Queensland (Table 2) for the 2016–17 period was 74,627 tonnes which is a 70 per cent increase from the 2015–16 year (43,975 tonnes). The number of transportations (Table 4) for the 2016–17 year was 3,021 which is a 36 per cent increase on the 2221 in 2015–16.
- During the 2016–17 year, the department's compliance efforts have been focused on intrastate movements and therefore have not identified any companies as having transported waste into Queensland without authorisation.

⁴ Prior to 29 August 2014, the waste tracking provisions were contained within Part 4 of the Environmental Protection (Waste Management) Regulation 2000.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Table 1: Number of consignment authorisations issued by Queensland

Reporting year	Consignment authorisations issued
2015–16	287
2016–17	300

Table 2: Quantity of controlled waste into Queensland for the period 1 July 2016 to 30 June 2017—tonnes per waste category by State/Territory

Code	Description	NSW	Vic	Qld	WA	SA	Tas	Act	NT	Ext terr [*]	Total (tonnes)
A	Plating and heat treatment	0.4	0	n/a	0	0	0	0	0	0	0.4
B	Acids	2.8	0	n/a	0	0	0	0	0	0	2.8
C	Alkalis	67.6	196.6	n/a	0	0	0	0	0	0	264.2
D	Inorganic chemicals	1327.6	0	n/a	0	0	137.3	0	150.0	0	1614.8
E	Reactive chemicals	106.0	0	n/a	0	0	0	0	0	0	106.0
F	Paints, resins, inks, organic sludges	305.8	3.6	n/a	0	0	0	0	0	0	309.4
G	Organic solvents	6481.8	0	n/a	0	0	0	0	0	0	6481.8
H	Pesticides	17.4	0	n/a	0	5.3	0	0	0	0	22.7
J	Oils	24,239.9	397.1	n/a	0	0.0	0	0	1809.1	0	26,446.2
K	Putrescible / organic waste	3630.5	0	n/a	0	0	0	0	0	0	3630.5
L	Industrial washwater	4536.3	2.2	n/a	0	14.2	0	0	0	0	4552.7
M	Organic chemicals	30,975.2	16.7	n/a	0	51.0	8.3	0	0	0	31,051.2
N	Soil / sludge*	131.2	0.4	n/a	0	0	0	0	0	0	131.6
R	Clinical and pharmaceutical		12.5	n/a	0	0	0	0	0	0	12.5
T	Miscellaneous	0.4	0	n/a	0	0	0	0	0	0	0.4
State totals		71,822.4	629.2	n/a	0	70.5	145.5	0	1959.1	0	74,626.8

^{*}Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 3: Discrepancies in movements of controlled waste into Queensland for the period 1 July 2016 to 30 June 2017—percentage of total movements

Discrepancy type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
Consignment non-arrival (%)**	0	0	0	0	0	0	0	0	0
Transport without authorisation (%)*	0	0	0	0	0	0	0	0	0
Non-matching documentation (%)*	0	0	0	0	0	0	0	0	0
Waste data (%)*	0	0	0	0	0	0	0	0	0

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

** During the 2016–17 year, the department's compliance efforts have been focussed on intrastate movements and therefore have not identified any companies as having transported waste into Queensland without authorisation.

Table 4: Number of movements of controlled waste into Queensland for the period 1 July 2016 to 30 June 2017

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
2897	44	n/a	0	14	515	0	51	0

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure for Western Australia by the Hon Albert Jacob, MLA Minister for Environment; Heritage (21 March 2013 to 16 March 2017) and the Hon. Stephen Dawson, MLC Minister for Environment; Disability Services (17 March 2017 to 30 June 2017) for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

On 1 July 2017, the Western Australian Department of Environment Regulation was amalgamated with two other departments: the Department of Water and the Office of the Environmental Protection Authority and was renamed the Department of Water and Environmental Regulation. The Department of Water and Environmental Regulation is responsible for administering the implementation of the NEPM in Western Australia.

Western Australia is reviewing the Environmental Protection (Controlled Waste) Regulations 2004 to streamline processes for the regulation of the transportation of controlled wastes.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Table 1: Number of consignment authorisations issued by Western Australia

Reporting year	Consignment authorisations issued
2015–16	4
2016–17	10

Table 2: Quantity of controlled waste into Western Australia for the period 1 July 2016 to 30 June 2017—tonnes per waste category by state/territory

Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*	Total (tonnes)
A	Plating and heat treatment				n/a				15.95		15.95
B	Acids				n/a						0
C	Alkalis				n/a						0
D	Inorganic chemicals				n/a						0
E	Reactive chemicals				n/a						0
F	Paints, resins, inks organic sludges				n/a						0
G	Organic solvents				n/a						0
H	Pesticides				n/a						0

Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*	Total (tonnes)
J	Oils				n/a	41			361		402
K	Putrescible/organic waste				n/a				356		356
L	Industrial washwater				n/a						0
M	Organic chemicals				n/a				35.7		35.7
N	Soil/sludge				n/a						0
R	Clinical and pharmaceutical				n/a						0
T	Misc.				n/a						0
State totals (tonnes)		0	0	0	0	41	0	0	768.7	0	809.65

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 3: Discrepancies in movements of controlled waste into Western Australia for the period 1 July 2016 to 30 June 2017—percentage of total movements

Discrepancy type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
Consignment non-arrival				n/a					
Transport without authorisation				n/a					
Non-matching documentation				n/a					
Waste data				n/a					

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 4: Number of movements of controlled waste into Western Australia for the period 1 July 2016 to 30 June 2017

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
			n/a	3			34	

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

South Australia

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure for South Australia by the Hon Ian Hunter MLC, Minister for Sustainability, Environment and Conservation for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The NEPM is implemented by the Environment Protection (Movement of Controlled Waste) Policy 2014 under the *Environment Protection Act 1993*.

During 2016–17 the Implementation Agreement between state and territory agencies on matters relating to the implementation of the NEPM was reviewed by jurisdictions through the Movement of Controlled Waste Implementation Working Group. The revised Agreement was signed by all jurisdictions on 1 May 2017.

No implementation issues were reported during 2016–17.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Table 1: Number of consignment authorisations issued by South Australia

Reporting year	Consignment authorisations issued
2015–16	205
2016–17	193

Table 2: Quantity of controlled waste into South Australia for the period 1 July 2016 to 30 June 2017—tonnes per waste category by state/territory

Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*	Total (tonnes)
A	Plating and heat treatment	0.00	0.00	0.00	0.00	n/a	0.00	0.00	0.00	0.00	0.00
B	Acids	31.36	0.00	39.00	22.52	n/a	0.00	0.00	185.60	0.00	278.48
C	Alkalis	3.22	0.00	0.00	5.65	n/a	0.00	0.00	719.64	0.00	728.51
D	Inorganic chemicals	11,021.9	20,822.70	0.00	130.54	n/a	145,018.16	38.88	337.47	0.00	177,369.68
E	Reactive chemicals	0.00	0.96	0.00	0.00	n/a	0.00	0.00	0.00	0.00	0.96
F	Paints, resins, inks, organic sludges	189.40	1803.53	166.96	33.86	n/a	0.00	0.00	159.11	0.00	2352.86
G	Organic solvents	78.81	82.66	0.00	27.95	n/a	0.00	0.00	0.00	0.00	189.42
H	Pesticides	0.00	40.04	0.00	0.00	n/a	0.00	0.00	0.00	0.00	40.04
J	Oils	495.72	615.4	168.00	399.60	n/a	0.00	0.00	623.72	0.00	2302.53
K	Putrescible / organic waste	0.00	0.00	0.00	0.00	n/a	0.00	0.00	0.00	0.00	0.00
L	Industrial washwater	0.00	0.00	0.00	0.00	n/a	0.00	0.00	0.00	0.00	0.00
M	Organic chemicals	0.07	5.60	0.00	0.00	n/a	0.00	0.00	51.00	0.00	56.67
N	Soil / sludge	220.79	46.97	0.00	0.00	n/a	0.00	0.00	129.08	0.00	396.84
R	Clinical and pharmaceutical	0.00	0.00	0.00	0.00	n/a	49.30	0.00	2018.04	0.00	2067.34
T	Miscellaneous	10.88	0.00	0.00	3.68	n/a	0.00	0.00	32.15	0.00	46.71
State totals		12,052.18	23,417.95	373.96	623.80	0.00	145,067.46	38.88	4255.81		185,830.04

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 3: Discrepancies in movements of controlled waste into South Australia for the period 1 July 2016 to 30 June 2017—percentage of total movements

Discrepancy type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
Consignment non-arrival	36	27	60	62	n/a	11	67	40	0
Transport without authorisation	0	0	0	0	n/a	0	0	0	0
Non-matching documentation	0	0	0	0	n/a	0	0	0	0
Waste data	0	0	0	0	n/a	0	0	0	0

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 4: Number of movements of controlled waste into South Australia for the period 1 July 2016 to 30 June 2017

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
409	712	16	64	n/a	65	1	323	0

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure for Tasmania by the Hon Elise Archer MP, Minister for Environment and Parks for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

In Tasmania, the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure (NEPM) is a state policy under the *State Policies and Projects Act 1993*. The key legislative instrument for implementation of the NEPM is the *Environmental Management and Pollution Control Act 1994*. The Department of Primary Industries, Parks, Water and Environment is the responsible agency for the purposes of implementation of the NEPM.

The NEPM is fully implemented in Tasmania.

Tasmania regularly consults with the other jurisdictions on NEPM matters such as issuing consignment authorisations and the appropriateness of treatment/disposal facilities. Tasmania continues to participate in all implementation aspects of the NEPM including exchange of relevant information through active membership in the Implementation Working Group which has met face-to-face during the reporting period. Issues raised by industry, waste transport companies and other agencies continue to be satisfactorily resolved through this forum.

As controlled waste received from external territories is reported separately, this has particular significance for Tasmania as most of the controlled waste consignment authorisations issued by Tasmania are for controlled wastes returned to Australia from Antarctica.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The driving force in achieving the NEPM goal has been ongoing consultation between waste producers, transporters and the Department of Primary Industries, Parks, Water and Environment on controlled waste matters, particularly in relation to reducing the amount of controlled waste generated at source. A reduction in risks of adverse impacts associated with transport of controlled waste on the environment and human health has been achieved through improved waste management.

There has been additional and ongoing consultation between jurisdictions in relation to the appropriateness of issuing consignment authorisations.

Table 1: Number of consignment authorisations issued by Tasmania

Reporting year	Consignment authorisations issued
2015–16	29
2016–17	29

Table 2: Quantity of controlled waste into Tasmania for the period 1 July 2016 to 30 June 2017—tonnes per waste category by state/territory

Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*	Total (tonnes)
A	Plating and heat treatment										0.00
B	Acids									6.00	6.00
C	Alkalis									0.20	0.20
D	Inorganic chemicals		4000.00		325.00					1.22	4326.22
E	Reactive chemicals									0.02	0.02
F	Paints, resins, inks, organic sludges		112.00							2.00	114.00
G	Organic solvents									30.00	30.00
H	Pesticides										0.00
J	Oils									65.00	65.00
K	Putrescible / organic waste									92.00	92.00
L	Industrial washwater										0.00
M	Organic chemicals									0.15	0.15
N	Soil / sludge									37.50	37.50
R	Clinical and pharmaceutical									.60	.60
T	Miscellaneous									3.50	3.50
State totals		0.00	4112.00	0.00	325.00	0.00	0.00	0.00	0.00		4675.19

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 3: Discrepancies in movements of controlled waste into Tasmania for the period 1 July 2016 to 30 June 2017—percentage of total movements

Discrepancy type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
Consignment non-arrival						n/a			
Transport without authorisation						n/a			
Non-matching documentation						n/a			
Waste data						n/a			

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 4: Number of movements of controlled waste into Tasmania for the period 1 July 2016 to 30 June 2017

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
	5		1					23

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure for the Australian Capital Territory by Mr Mick Gentleman MLA for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

Access Canberra, within the Chief Minister, Treasury and Economic Development Directorate, is responsible for the implementation and administration of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure (the NEPM). The Environment and Planning Directorate is responsible for the development of legislation and policy to ensure the NEPM is appropriately implemented in the Australian Capital Territory (ACT).

The provisions of the NEPM are implemented through the *Environment Protection Act 1997* (the Act).

The NEPM has been fully implemented and operational in the ACT since March 2000 with no major issues identified with its operation.

NEPM information sheets (which include an explanation of producer, transporter and waste facility responsibilities and instructions on how to complete a waste transport certificate) have been produced by the ACT Government to assist stakeholders in meeting their statutory obligations.

All parties bound by the NEPM have complied with the NEPM's protocols and information reporting requirements. Regular contact has been maintained with other jurisdictions to ensure cooperative administration of the NEPM.

The ACT is investigating an electronic waste tracking system similar to those implemented in other jurisdictions to replace the ACT's paper based tracking system.

Movements have continued into the ACT from other jurisdictions primarily for the treatment of polychlorinated biphenyl free contaminated oil from South Australia and treatment of clinical waste and disposal of contaminated soil from the surrounding NSW regions.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Table 1: Number of consignment authorisations issued by the ACT

Reporting year	Consignment authorisations issued
2015–16	53
2016–17	41

Table 2: Quantity of controlled waste into the ACT for the period 1 July 2016 to 30 June 2017—tonnes per waste category by state/territory

Code	Description	NSW	Vic	Qld	WA	SA	Tas	Act	NT	Ext terr*	Total (tonnes)
A	Plating and heat treatment										0.00
B	Acids										0.00
C	Alkalis										0.00
D	Inorganic chemicals										0.00
E	Reactive chemicals										0.00
F	Paints, resins, inks, organic sludges										0.00
G	Organic solvents										0.00
H	Pesticides										0.00
J	Oils	57.60	16.50	25.80		292.00					391.90
K	Putrescible / organic waste										0.00
L	Industrial washwater										0.00
M	Organic chemicals										0.00
N	Soil / sludge	660.50									660.50
R	Clinical and pharmaceutical	223.70									223.70
T	Miscellaneous										0.00
State totals		941.80	16.50	25.80	0.00	292.00	0.00	0.00	0.00		1276.10

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 3: Discrepancies in movements of controlled waste into the ACT for the period 1 July 2016 to 30 June 2017—percentage of total movements

Discrepancy type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
Consignment non-arrival									
Transport without authorisation									
Non-matching documentation									
Waste data									

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 4: Number of movements of controlled waste into the ACT for the period 1 July 2016 to 30 June 2017

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
793	2	1	0	9	0	0	0	0

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Northern Territory

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure for the Northern Territory by the Hon Lauren Moss MLA, Minister for Environment and Natural Resources for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The Northern Territory *Waste Management and Pollution Control Act* provides the legislative basis to regulate and administer the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure (NEPM). The Northern Territory Environment Protection Authority administers the Northern Territory’s obligations through licensing of scheduled activities that involve the movement of controlled wastes across state/territory boundaries and the issuing and receipt of Waste Transport Certificates.

This level of involvement is commensurate with the terms of the Agreement between States and Territories on matters relating to the implementation of the NEPM. The level of environmental safeguard is further bolstered within the NT by the NT WorkSafe administration of the *Transport of Dangerous Goods by Road and Rail (National Uniform Legislation) Act*.

Movement of controlled waste out of the Northern Territory almost doubled in 2016–17 and it is likely to continue to increase as industries continue to grow. Oils comprise 60 per cent of all waste movements out of the NT, with inorganic chemicals (e.g. drilling water from shale gas, lithium batteries, mercury, fire extinguishers) accounting for 16 per cent of waste movements.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Movement of controlled waste tends to be from the Northern Territory to other states. The NEPM provides a consistent system for use in the Northern Territory when required and the NT has implemented a paper based system for consignment authorisations and waste tracking certificates. The NT is exploring options for an electronic database to facilitate more efficient waste tracking under the NEPM.

Table 1: Number of consignment authorisations issued by Northern Territory

Reporting year	Consignment authorisations issued
2015–16	3
2016–17	3

Table 2: Quantity of controlled waste into the Northern Territory for the period 1 July 2016 to 30 June 2017—tonnes per waste category by state/territory

Code	Description	NSW	Vic	Qld	WA	SA	Tas	Act	NT	Ext terr*	Total (tonnes)
A	Plating and heat treatment										0.00
B	Acids										0.00
C	Alkalis										0.00
D	Inorganic chemicals										0.00
E	Reactive chemicals										0.00
F	Paints, resins, inks, organic sludges										0.00
G	Organic solvents										0.00
H	Pesticides										0.00
J	Oils			132.55	619.00						751.55
K	Putrescible / organic waste										0.00
L	Industrial washwater										0.00
M	Organic chemicals										0.00
N	Soil / sludge*										0.00
R	Clinical and pharmaceutical										0.00
T	Miscellaneous										0.00
State totals		0.00	0.00	132.55	619.00	0.00	0.00	0.00	0.00		751.55

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 3: Discrepancies in movements of controlled waste into Northern Territory for the period 1 July 2016 to 30 June 2017—percentage of total movements

Discrepancy type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext terr*
Consignment non-arrival			0	0					
Transport without authorisation			0	0					
Non-matching documentation			0	0					
Waste data			0	0					

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 4: Number of movements of controlled waste into Northern Territory for the period 1 July 2016 to 30 June 2017

NSW	VIC	QLD	WA	SA	Tas	ACT	NT	Ext terr*
		5	15					

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Table 5: Quantity of controlled waste out of the Northern Territory for the period 1 July 2016 to 30 June 2017—tonnes per waste category by state/territory

Code	Description	NSW	Vic	Qld	WA	SA	Tas	Act	NT	Ext terr*	Total (tonnes)
A	Plating and heat treatment								0.00		0.00
B	Acids								187.56		187.56
C	Alkalies								592.06		592.06
D	Inorganic chemicals								1111.09		1111.09
E	Reactive chemicals								0.00		0.00
F	Paints, resins, inks, organic sludges								289.88		289.88
G	Organic solvents								4.06		4.06
H	Pesticides								0.52		0.52
J	Oils								4035.78		4035.78
K	Putrescible / organic waste								6.25		6.25
L	Industrial washwater								40.05		40.05
M	Organic chemicals								31.26		31.26
N	Soil / sludge*								336.43		336.43
R	Clinical and pharmaceutical								98.23		98.23
T	Miscellaneous								116.82		116.83
State totals		0.00	0.00	0.00	0.00	0.00	0.00	0.00	6849.99		6849.99

*Information regarding external territories (Ext terr) has only been provided since the reporting year 2009–10.

Appendix 6:
Jurisdictional reports on
the implementation and
effectiveness of the
National Pollutant Inventory
National Environment
Protection Measure

Commonwealth

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for the Commonwealth by the Hon Josh Frydenberg MP, Minister for the Environment and Energy, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

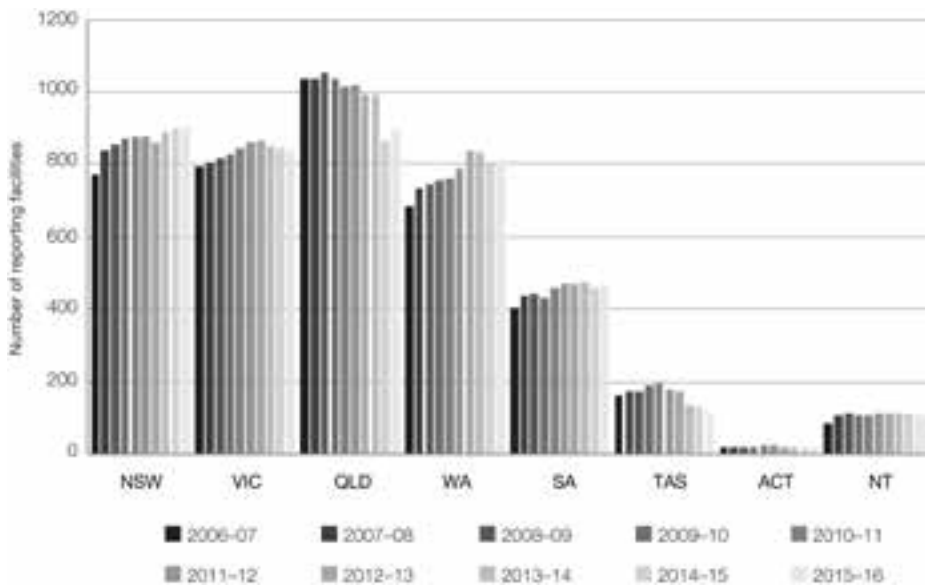
- The Commonwealth released terms of reference for an independent review of the National Pollutant Inventory as agreed by the National Environment Protection Council.
- The Commonwealth implements the NEPM administratively and ensures that its obligations under the *National Environment Protection Act 1994* and *National Environment Protection Measures (Implementation) Act 1998* are met.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The Commonwealth published the 2015–16 National Pollutant Inventory data in March 2017. The number of facilities reporting to the inventory rose from 4133 in 2014–15 to 4165 in 2015–16.

Figure 1 below shows the number of facilities reporting to the National Pollutant Inventory in each jurisdiction over past 10 years.

Figure 1: Number of reporting facilities in each jurisdiction by year since 2006–07



The Commonwealth continued to work cooperatively with all jurisdictions to administer the National Pollutant Inventory NEPM and maintain the online reporting system to ensure reliable collection of industry data. The Commonwealth also updated industry guidance on the National Pollutant Inventory website.

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Public		
<ul style="list-style-type: none"> • 288,026 user sessions on the National Pollutant Inventory website 	<ul style="list-style-type: none"> • Environmental Justice Australia (a community-based environmental advocacy group) raised concerns about National Pollutant Inventory data from the coal industry. The group wants stronger pollution controls, monitoring, and regulation of industrial facilities. • The number of user sessions increased from 274,066 in the previous year. • There was an increase in the number of complaints related to defects in the behaviour of the National Pollutant Inventory database. 	<ul style="list-style-type: none"> • For the first time, the Commonwealth published the National Pollutant Inventory dataset on the whole-of-government platform, data.gov.au. This improvement makes the inventory data more discoverable, accessible, and reusable while allowing easier analysis in common desktop tools. • 96 calls were received by the Commonwealth through the free call phone line, however most of these were calls from industry seeking advice on National Pollutant Inventory reporting requirements. Most industry calls were referred to the relevant state or territory National Pollutant Inventory team. • 224 email responses were sent to questions received via the National Pollutant Inventory website and email address.
Industry		
<ul style="list-style-type: none"> • 4165 reports for 2015–16 • 4133 reports for 2014–15 • 112 new reporters • no new sectors reporting 	<ul style="list-style-type: none"> • The National Pollutant Inventory maintained positive relationships with industry stakeholders, researchers and the community. • The Minerals Council of Australia invited the National Pollutant Inventory to consider adopting Australia-specific PM₁₀ emission factors for coal mines, which were developed for the Australian Coal Association Research Program. 	<ul style="list-style-type: none"> • The Commonwealth commissioned an independent review of Australia-specific PM₁₀ emission factors for coal mines, as proposed by Minerals Council of Australia. The NSW, Qld, SA, and WA governments provided technical support and quality assurance for the review. • 1 industry guidance manual received minor updates on the National Pollutant Inventory website. • The Commonwealth helped industry reporters when state and territory National Pollutant Inventory teams were unable to.
Government		
<ul style="list-style-type: none"> • Eight facilities from three Commonwealth departments reported to the National Pollutant Inventory in 2015–16. 	<ul style="list-style-type: none"> • National Pollutant Inventory data on mercury emissions and transfers was provided to the Department of the Environment and Energy to support consideration of a national phase-down of mercury. 	<ul style="list-style-type: none"> • The Commonwealth chaired and provided secretariat support for the National Pollutant Inventory Intergovernmental Working Group, which oversees key inventory administration activities. • The Commonwealth established a steering committee of senior policy officials to oversee the delivery of an independent review of the National Pollutant Inventory.

New South Wales

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for New South Wales by the Hon Gabrielle Upton, Minister for the Environment, Minister for Local Government, and Minister for Heritage for the reporting year ended 30 June 2016.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The New South Wales Environment Protection Authority implements the National Environment Protection (National Pollutant Inventory) Measure (NEPM) through the provisions in Chapter 4 of the Protection of the Environment Operations (General) Regulation 2009, including:

- definition of reporting premises and substance thresholds
- reporting and record keeping requirements
- compliance and penalty requirements
- emission estimation techniques
- exemptions.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

National Pollutant Inventory reporting

National Pollutant Inventory facility emissions and transfers are reported for the 2015–16 reporting period.

The Environment Protection Authority conducts an annual face-to-face training program, which includes a series of half-day training courses to assist facility reporters with:

- understanding key elements of National Pollutant Inventory reporting
- using the inventory online reporting system
- applying calculation and validation tools rather than emission estimation technique manuals to reduce time and improve accuracy.

The National Pollutant Inventory online reporting system has led to improvements in the quality and accuracy of facility data by including estimation and validation tools and minimising the need for manual data entry. There are opportunities for further improvements, including:

- additional calculation tools to estimate the transfer of NPI substances in waste streams from key industry sectors
- emission factors for non-standard fuels
- improved fugitive emission estimation methods
- an interactive on-line training program.

Public activities

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Public		
<ul style="list-style-type: none">The number of community member visits to the National Pollutant Inventory website was recorded by the Commonwealth.	<ul style="list-style-type: none">Academics and researchers continue to use the National Pollutant Inventory data for modelling and other studies.The media utilises National Pollutant Inventory data where environmental issues of concern are identified. <p>Some issues have been identified:</p> <ul style="list-style-type: none">Community users of inventory data frequently fail to access 'transfer' data as the 'search by form' screen does not incorporate 'transfer' destination searches.Enquiries from public and media continue to demonstrate a growing awareness of the dataset, however there continues to be a strong need to provide contextual information about the data.	<ul style="list-style-type: none">Presentation to stakeholders during consultation.

Industry and government activities

There were 16 new reporters in 2015–16.

The Environment Protection Authority undertakes industry sector reviews to identify facilities that may be required to report data to the National Pollutant Inventory. Generally, these industry sector reviews include facilities that currently hold an environment protection licence issued under the *Protection of the Environment Operations Act 1997*.

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Industry		
<ul style="list-style-type: none"> • 904 reports for 2015–16 • compared to 896 reports for 2014–15 • 16 new reporters in 2015–16 • no confidentiality claims submitted 	<ul style="list-style-type: none"> • Training and support provided by the Environment Protection Authority to facility reporters has improved data quality and reduced costs to National Pollutant Inventory facility reporters. 	<ul style="list-style-type: none"> • During 2015–16, the Environment Protection Authority trained 52 reporters, including in using the National Pollutant Inventory online reporting system. • Ongoing industry requests to the Environment Protection Authority for training and guidance material on transfers of National Pollutant Inventory substances in waste streams.
Government		
<ul style="list-style-type: none"> • 904 desktop audits 	<ul style="list-style-type: none"> • The Environment Protection Authority continues to use the National Pollutant Inventory to inform policy and regulatory approaches. • The Environment Protection Authority continues to use the National Pollutant Inventory to analyse environmental outcomes in relation to the regulation of substances at industrial facilities. 	<ul style="list-style-type: none"> • The Environment Protection Authority continues to utilise an internal communication program to inform staff about the importance of the National Pollutant Inventory and the emission estimation techniques. • Regular National Pollutant Inventory officer meetings facilitate information exchange and knowledge sharing between jurisdictions and seek to ensure a consistent ‘harmonised’ approach for reporters with multiple facilities across Australia.

Victoria

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Victoria by the Hon Lily D'Ambrosio, Minister for Energy, Environment and Climate Change for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The National Pollutant Inventory NEPM is implemented in Victoria through the Waste Management Policy (National Pollutant Inventory) 2012.

While the EPA experienced no major National Pollutant Inventory-related implementation issues in 2016–17, the EPA has some concerns regarding the quality and timeliness of the National Pollutant Inventory data provided by industrial facilities. Neither the Waste Management Policy National Pollutant Inventory nor National Pollutant Inventory NEPM contains any penalty provisions as their intention was to encourage industry participation in the program. Absence of penalty provisions aiding enforcement makes it difficult to ensure that the National Pollutant Inventory reports are submitted on time and contain accurate and comprehensive data.

The EPA is planning to raise the issue of the National Pollutant Inventory data quality and program enforceability during the upcoming statutory review of the National Pollutant Inventory NEPM.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Public		
<ul style="list-style-type: none"> The number of community member visits to the National Pollutant Inventory website was recorded by the Commonwealth. 		
Industry		
<ul style="list-style-type: none"> 837 published reports for 2015–16 844 published reports for 2014–15. 18 new reporters 0 confidentiality claims submitted 	<ul style="list-style-type: none"> Industry reporters complained about their difficulties in using the National Pollutant Inventory online reporting system and specifically the MS Excel calculation tools. 	<ul style="list-style-type: none"> 95 per cent of published industry reports for both 2015–16 and 2014–15 were submitted online.
Government		
<ul style="list-style-type: none"> 200 desktop audits 9 on-site audits 0 regulatory actions 	<ul style="list-style-type: none"> No specific feedback was received from the government. The EPA has used the National Pollutant Inventory data for air quality modelling; cross-checking licence compliance; prioritising compliance work; and for the review of the Scheduled Premises Regulations. 	

Queensland

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Queensland by the Hon Steven Miles MP, Minister for Environment and Heritage Protection and Minister for National Parks and the Great Barrier Reef, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

Opportunities exist to improve the effectiveness and implementation of the National Pollutant Inventory through a strategic review. Queensland supports investigating these opportunities through the detailed review of the current National Environmental Protection Measure.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Public		
<ul style="list-style-type: none"> The number of community member visits to the National Pollutant Inventory website was recorded by the Commonwealth. 	<ul style="list-style-type: none"> 20 news articles were circulated in the 2016–17 year compared to 16 in the 2015–16 year. The number of enquiries about the NPI data from the general community during the 2015–16 year is similar to the 2014–15. 	<ul style="list-style-type: none"> NPI emissions and transfer reports were published through the Queensland Open Data portal www.data.qld.gov.au.
Industry		
<ul style="list-style-type: none"> 892 reports for 2015–16 867 reports for 2014–15 10 new reporters 0 new sectors reporting 0 confidentiality claims submitted 	<ul style="list-style-type: none"> The National Pollutant Inventory online reporting system continues to be the preferred method for industry to submit their pollutant emissions and transfer data. Industry interest in receiving National Pollutant Inventory training declined during the period. 	<ul style="list-style-type: none"> 58 per cent of facility reports were subject to desktop evaluation. No onsite audits were conducted during the period to assess the thoroughness and accuracy of facility reporting.
Government		
<ul style="list-style-type: none"> 518 desktop audits 0 on-site audits 0 regulatory actions 	<ul style="list-style-type: none"> The Queensland Department of Science Information Technology and Innovation utilised the industry pollutant emissions data to contribute to the development of emissions inventories and specific externally funded projects. 	<ul style="list-style-type: none"> The Department of Science Information Technology and Innovation National Pollutant Inventory team continues to communicate with local Department of Environment and heritage officers to promote a two way flow of information across staff and to provide industry with a one-stop-shop for seeking further information.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Western Australia by the Hon Albert Jacob, MLA Minister for Environment; Heritage (21 March 2013 to 16 March 2017) and the Hon Stephen Dawson, MLC Minister for Environment; Disability Services (17 March 2017 to 30 June 2017) for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

On 1 July 2017, the Western Australian Department of Environment Regulation was amalgamated with two other departments: the Department of Water and the Office of the Environmental Protection Authority and was renamed the Department of Water and Environmental Regulation.

In Western Australia, the Department of Water and Environmental Regulation is responsible for implementing the National Environment Protection (National Pollutant Inventory) Measure under the *National Environment Protection Council (WA) Act 1996*, the *Environmental Protection Act 1986* and the Environmental Protection Regulations. The implementation of the NEPM continues to be successful in Western Australia.

The Department of Water and Environmental Regulation has identified opportunities for enhanced administration of the National Pollutant Inventory NEPM through the collection and reporting of aggregated emissions data. Work on the Perth Air Emissions Study 2011–12 was undertaken during the period to update the aggregated emissions data for the greater Perth metropolitan region.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Public		
<ul style="list-style-type: none"> The number of community member visits to the National Pollutant Inventory website was recorded by the Commonwealth. 	<ul style="list-style-type: none"> Environment groups and the media utilise National Pollutant Inventory NEPM data where environmental issues of concern are identified. 	
Industry		
<ul style="list-style-type: none"> 811 reports for 2015–16 797 reports for 2014–15 41 new reporters no new sectors reporting no confidentiality claims submitted 	<ul style="list-style-type: none"> Widespread compliance with the online reporting system with 99 per cent uptake in WA for 2015–16 (three per cent increase). Some smaller facilities require above-average reporting guidance due to the lack of dedicated personnel. Major industrial facilities maintain awareness of community interest in their emissions, and ensure reports accurately reflect site emissions. Support provided by the Department of Environment regulation staff acknowledged by reporters. 	<ul style="list-style-type: none"> Training sessions provided to industry reporters included information sessions, a webinar and online reporting training. Reporters from other jurisdictions were invited and attended the webinar. Continued to follow-up potential reporters in several industry sectors. Reporters regularly reminded of reporting deadlines and supplied additional reporting information to that available on website.

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Government		
<ul style="list-style-type: none"> • 811 desktop audits • 10 on-site audits • no regulatory actions 	<ul style="list-style-type: none"> • The Department of Environment Regulation uses the National Pollutant Inventory NEPM to inform policy development, program implementation and to support regulatory activity. • The Department of Environment Regulation uses National Pollutant Inventory NEPM data for the development of an emissions inventory for the greater Perth metropolitan region. • National Pollutant Inventory NEPM data is used to identify and rank WA's major emitters with comparisons made with national data. 	<ul style="list-style-type: none"> • A dashboard was developed for the Department of Environment Regulation licensing personnel providing easier use and analysis of emissions reported by licensed premises. • The Department of Environment Regulation uses toxic equivalency potentials to support the assessment of risk.

South Australia

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for South Australia by the Hon Ian Hunter MLC, Minister for Sustainability, Environment and Conservation, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

In South Australia the Environment Protection Authority implements the National Environment Protection (National Pollutant Inventory) Measure through the Environment Protection (National Pollutant Inventory) Policy 2008.

South Australia welcomes the pending statutory review of the National Pollutant Inventory NEPM to deliver the necessary improvements to the National Pollutant Inventory program to ensure its longevity and utility in the future, and notes that progress is awaiting the appointment of staff to lead the review.

South Australia participated in the review of emission factors for particulate matter size 10 micrometres (PM_{10}) from coal mining as part of the National Pollutant Inventory subcommittee tasked with reviewing the Australian Coal Association Research Project Report C22027—*Development of Australian-Specific PM_{10} Emission Factors for Coal Mines*.

A detailed air emissions inventory remains a strategic priority for both the National Pollutant Inventory program and the South Australian Environment Protection Authority. Aggregate emissions data are required for reliable comparison with industry emissions, however overall funding levels do not currently permit appropriate resourcing for the updating of aggregate emissions data (last done in South Australia in 2003).

South Australia strongly supports the recent provision of a National Pollutant Inventory dataset to <https://data.gov.au/dataset/mpi>. This is an important step in making information more accessible, easier to use for data analysis and more comparable with other datasets.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The five National Pollutant Inventory industry audits undertaken have led to improvement in the accuracy and better understanding of National Pollutant Inventory reporting. The South Australian National Pollutant Inventory team has been actively involved in the National Pollutant Inventory Intergovernmental Working Group to continually improve guidance and consistency in reporting.

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Public		
<ul style="list-style-type: none"> The number of community member visits to the National Pollutant Inventory website was recorded by the Commonwealth. 	<ul style="list-style-type: none"> There are occasional enquiries about National Pollutant Inventory data from the general public. The media use National Pollutant Inventory data. 	<ul style="list-style-type: none"> Prompt responses are made when National Pollutant Inventory data is requested.
Industry		
<ul style="list-style-type: none"> 468 reports for 2015–16 460 reports for 2014–15 10 new reporters in 2015–16 no new sectors reporting no confidentiality claims submitted 	<ul style="list-style-type: none"> Online reporting training has been well received by industry. 	<ul style="list-style-type: none"> A newsletter was published on the SA EPA website to inform reporters about updates and provide general information about National Pollutant Inventory reporting. Industry enquiries have been followed up. Training on National Pollutant Inventory requirements, online reporting and ‘drop in’ sessions were held in Adelaide.
Government		
<ul style="list-style-type: none"> 468 desktop audits five on-site audits 	<ul style="list-style-type: none"> The SA EPA utilises National Pollutant Inventory data to implement the resource efficiency component of its load based or ‘polluter pays’ licensing system. National Pollutant Inventory data are vital for developing air quality modelling to provide comprehensive, spatially distributed diffuse and industrial point pollutant emission data across all SA airsheds. 	<ul style="list-style-type: none"> Participation in the National Pollutant Inventory Intergovernmental Working Group remains important for the discussion of policy, strategy and technical implementation details.

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Tasmania by the Hon Elise Archer MP, Minister for Environment and Parks for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- The National Environment Protection (National Pollutant Inventory) Measure continues to be implemented in Tasmania.
- An internal review of industry reporting levels is planned in response to feedback from industry about reporting capability, awareness of NEPM obligations, and potential under-reporting.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Public		
<ul style="list-style-type: none"> • The number of community member visits to the National Pollutant Inventory website was recorded by the Commonwealth. 	<ul style="list-style-type: none"> • There were no explicit requests for National Pollutant Inventory data. • One request for emissions data for diesel generators referred to the National Pollutant Inventory website. 	<ul style="list-style-type: none"> • The National Pollutant Inventory website was modified to link to the EPA Tasmania's National Pollutant Inventory webpage, to facilitate easier access to inventory information.
Industry		
<ul style="list-style-type: none"> • 154 reports for 2016–17 • 141 reports for 2015–16 • 7 new reporters • no new sectors reporting • 1 confidentiality claims submitted 	<ul style="list-style-type: none"> • There is a need for emission estimation guidance for burning LNG in dryers • There is a need for emission estimation technique manuals to be updated. • Some businesses (mostly small and medium-sized enterprises) struggle to prioritise annual National Pollutant Inventory reporting. 	<ul style="list-style-type: none"> • Review of industry reporting levels in planning stages. • Training delivered during 34 site visits to businesses. • Training need and effort for SMEs is greater compared with large businesses.
Government		
<ul style="list-style-type: none"> • 140 desktop audits • No on-site audits • No regulatory actions 	<ul style="list-style-type: none"> • No feedback 	<ul style="list-style-type: none"> • Continued attendance and participation in intergovernmental working group meetings.

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Australian Capital Territory by Mr Mick Gentleman, MLA for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- The ACT Government implemented the NEPM under the provisions of the *Environment Protection Act 1997*.
- There was a continued need for training of reporters using the online reporting system due to staff turnover.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Public		
<ul style="list-style-type: none"> • The number of community member visits to the National Pollutant Inventory website was recorded by the Commonwealth. 	<ul style="list-style-type: none"> • No specific feedback was received from the community. 	
Industry		
<ul style="list-style-type: none"> • 22 reports for 2015–16 • 21 reports for 2014–15 • no new reporters • no new sectors reporting • no confidentiality claims submitted 	<ul style="list-style-type: none"> • Some facilities continued to require one-on-one training for understanding of the NEPM and the online reporting system. 	<ul style="list-style-type: none"> • All ACT reporters used the online reporting system. • One-on-one training sessions continued to work successfully. • Industry enquiries were responded to in a timely manner.
Government		
<ul style="list-style-type: none"> • 22 desktop audits • no on-site audits • no regulatory actions 	<ul style="list-style-type: none"> • No specific feedback was received from the government. 	<ul style="list-style-type: none"> • Every National Pollutant Inventory report underwent a desktop validation. • The ACT Government continued liaising with other jurisdictions to achieve a nationally consistent implementation.

Northern Territory

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Northern Territory by the Hon Lauren Moss, Minister for Environment and Natural Resources for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The National Pollutant Inventory program is implemented in the Northern Territory through an Environment Protection Objective established under the *Waste Management and Pollution Control Act*. Overall responsibility for implementation of the National Pollutant Inventory rests with the Northern Territory Environment Protection Authority (EPA).

Following previous Commonwealth funding cuts a reduced allocation of staff time and resources for administration of the National Pollutant Inventory has continued in 2016–17.

Changes to key staff for the Northern Territory EPA have also further reduced capacity to validate reports before their submission to the Commonwealth.

Reports were validated selectively based on evidence of significant emissions changes from previous years and facility size.

The Northern Territory does not have sufficient funding to perform aggregate emissions data modelling as required by the National Pollutant Inventory NEPM. Aggregate emissions data includes diffuse sources of emissions such as fuel stations, motor vehicles and other non-road engines.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Public		
<ul style="list-style-type: none">The number of community member visits to the National Pollutant Inventory website was recorded by the Commonwealth.	<ul style="list-style-type: none">No feedback was received from industry or the public.	None known
Industry		
<ul style="list-style-type: none">110 reports for 2016–17116 reports for 2015–166 less reporters0 new sectors reporting0 confidentiality claims submitted	None known	None known
Government		
<ul style="list-style-type: none">0 desktop audits0 on-site audits0 regulatory actions	<ul style="list-style-type: none">None known	<ul style="list-style-type: none">None known

Appendix 7:
Jurisdictional reports on
the implementation and
effectiveness of the
Used Packaging Materials
National Environment
Protection Measure

Commonwealth

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for the Commonwealth by the Hon Josh Frydenberg MP, Minister for the Environment and Energy, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- The Used Packaging Materials NEPM is implemented and enforced by participating jurisdictions through necessary laws and other administrative arrangements. It requires participating jurisdictions to establish a statutory basis for ensuring that signatories to the Australian Packaging Covenant (the Covenant) are not competitively disadvantaged in the market place by fulfilling their commitments under the Covenant.
- The Covenant is an agreement between government and industry in the packaging supply chain that aims to change the culture of business to design more sustainable packaging and increase recycling rates.
- The majority of packaging brand owners in Australia fall within one or more state and territory jurisdictions. If they are not exempt from the NEPM and Covenant, brand owners must become Covenant signatories, or become subject to NEPM requirements. Each state implements the NEPM through its own regulations.
- The NEPM requires participating state and territory jurisdictions to report annually on brand owners that are subject to NEPM requirements, carry out surveys of packaged products to ascertain the effectiveness of the NEPM, and report local government collection and participation data for kerbside or other municipal material recovery systems.
- The Commonwealth NEPM applies to packaging brand owner companies with over 50 per cent Commonwealth ownership, and to the Commonwealth's jurisdictional territories. Australia Post is the only Commonwealth brand owner under the definition of the NEPM, and Christmas and Cocos Keeling Islands are the only Commonwealth territories where the NEPM could be applied.
- The Australian Government and Australia Post are signatories to the Covenant, and so are not subject to the requirements of the NEPM. The Australian Government encourages all Commonwealth agencies, including Australia Post, to undertake Covenant activities.
- The NEPM requires the Commonwealth to provide information annually to the NEPC on the overall national performance of the Covenant. In accordance with Section 19 of the NEPM, the Covenant Council is to provide information to the Commonwealth in relation to:
 - membership of the Covenant expressed as both the number of signatories and the proportion of consumer packaging used in Australia represented by those signatories
 - the number of action plans lodged with the Covenant Council
 - recovery and utilisation rates reported by Covenant signatories in accordance with their action plans under the Covenant, with reference to the key performance indicators and targets specified in the Covenant
 - a statement of interpretation of the information.
- In November 2016, environment ministers endorsed the revised Covenant and five-year strategic plan. The revised Covenant refocuses the goals to areas where industry could have the most influence, such as sustainable packaging design and supply chain collaboration.
- The governance arrangements in the Covenant were modified to:
 - achieve greater transparency and accountability in the delivery on the work of the Covenant
 - account for industry forming the Australian Packaging Covenant Organisation who is tasked with managing and administering the Covenant.

- The five-year strategic plan, developed by the Australian Packaging Covenant Organisation on behalf of Covenant signatories and endorsed by environment ministers, identifies strategies in priority areas that align with the aim and goals of the Covenant over the five-year period.
- The new arrangements for the Covenant commenced on 1 January 2017.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

At the end of June 2017, there were 919 Covenant signatories nationally, of which 852 (92.73 per cent) were compliant. Non-compliant signatories are removed from the register of Covenant signatories and referred to the relevant state and territory government for follow up under the NEPM in each jurisdiction.

To comply with the Covenant, brand owner signatories are required to take the following actions:

- within three months of becoming a signatory, submit an action plan that sets out what the signatory proposes to do to contribute to the Covenant's aim and meets the obligations published by the Australian Packaging Covenant Organisation
- by 31 March each year, commencing in the financial year following the year in which a company becomes a signatory, submit an annual report that outlines performance against all of the action plan commitments and meets the reporting obligations as published by the Australian Packaging Covenant Organisation
- publish the action plan and annual reports on its website in a prominent and readily identifiable way
- make annual financial contributions in the form of membership fees payable to the Australian Packaging Covenant Organisation
- implement policies or procedures to buy products made from recycled materials
- establish collection and recycling programs for used packaging materials generated on site
- take action, where appropriate, to reduce litter
- allow independent audits of annual reports and the implementation of action plans, including allowing access to relevant supporting documentation demonstrating application of the Sustainable Packaging Guidelines, or an alternative to the guidelines
- assist the Australian Packaging Covenant Organisation to respond to complaints from the public about the design and use of packaging materials.

Covenant signatories showed meaningful improvement across key performance reporting indicators related to supporting market development for recycled content in packaging, and demonstrating innovation in developing and continuing sustainability initiatives.

Reporting year	Number of covenant signatories
2015–16	984
2016–17	919

New South Wales

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for New South Wales by the Hon Gabrielle Upton MP, Minister for the Environment for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

Under the Waste Less, Recycle More initiative, the NSW Government has continued to commit to reducing packaging waste in the state through a range of funding priorities, including waste and recycling infrastructure, recycling innovation, business recycling and littering. Up to July 2017 Waste Less, Recycle More has awarded \$92 million to infrastructure, \$28.1 million to businesses, and \$12.4 million to litter, including 119 litter projects. It has also resulted in 22,000 businesses having free waste assessments through the Bin Trim Program. The NSW Government has also allocated \$8.8 million to priority problem waste projects under the Recycling Innovation Fund, which includes waste types used for packaging.

Under the Waste Less, Recycle More 2017–21 extension, the NSW Government has committed to a further \$48 million in a Waste and Recycling Infrastructure Fund, \$30 million to a Litter Prevention and Enforcement Fund, \$22.5 million for a Business Recycling Program and \$5 million for the Recycling Innovation Fund.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

New South Wales has worked closely with the Australian Packaging Covenant (the Covenant) regarding the applicability of the NEPM to potential signatories. New South Wales has also communicated with industries that have sought clarification of the regulatory requirements.

Major reforms to the operation of the Covenant have been initiated in response to a comprehensive review by the Australian Government. These reforms include changes to the Covenant's governance structure, funding arrangements and the release of a new covenant. As a result of this structural change, the reporting methodology for the new covenant is evolving and the Australian Packaging Covenant is working to refine the process. No businesses were referred to the NSW Government between July 2016 and 30 June 2017.

Reporting year	Number of covenant signatories
2015–16	414
2016–17	394

Recovery data

Nil (no brand owner was subject to record-keeping obligations under the New South Wales Regulation).

Supporting data

The brand owner survey for 2016–17 was not conducted. In light of changes to the Australian Packaging Covenant structure, the agreed process and responsibility areas for the brand audit activity has not been finalised. This issue will be tabled at the next Government Officials Group meeting, scheduled for October 2017.

Complaints, investigations and prosecutions

No complaints in relation to specific businesses were received. No investigations or prosecutions were undertaken.

Statement of interpretation of the information

New South Wales has focused on the reduction of packaging waste through the Waste Less, Recycle More initiative. It has continued to engage with the Australian Packaging Covenant to meet the NEPM's outcomes.

Local government data

Local government data is available on the NSW Environment Protection Authority's website www.epa.nsw.gov.au/warrlocal/data.htm.

Victoria

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Victoria by the Hon Lily D'Ambrosio, Minister for Energy, Environment and Climate Change, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The NEPM is implemented in Victoria through the Waste Management Policy (Used Packaging Materials). The need for further work on the methodology for auditing brand owners under clause 16(4) of the NEPM has been identified (as required by clause 20(1)).

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The primary purpose of the Used Packaging Materials NEPM is to establish a statutory basis for ensuring that signatories to the Australian Packaging Covenant are not competitively disadvantaged in the marketplace by fulfilling their commitments under the Covenant.

The Secretariat of the Covenant is responsible for initially approaching companies that are identified as brand owners (and potential brand owners) to encourage them to become signatories to the Covenant. The Secretariat then refers non-signatory brand owners and non-compliant signatory brand owners to jurisdictions. This is done in line with compliance procedures set out in Schedule 3 of the Covenant. Jurisdictions then write to, and speak with, representatives of the companies referred to them.

As of 30 June 2017, there were 921 signatories to the Covenant nationally. Victoria has 341 signatories, 37.02 per cent of all signatories.

Reporting year	Number of covenant signatories
2015–16	372
2016–17	341

Recovery data

Clause 18 of the Used Packaging Materials NEPM requires jurisdictions to carry out surveys of packaged products (brand owner surveys) at least once every year to determine the effectiveness of the measure in preventing free riding. The last brand owner survey was conducted in December 2014 with results provided to the Covenant Secretariat in December 2014. In August 2015, a meeting of jurisdictions and industry resolved that jurisdictions would not carry out the brand owner audit during the reporting period, and that industry would take responsibility for brand owner audits from 1 July 2016.

Supporting data

Nil

Complaints, investigations and prosecutions

Nil

Statement of interpretation of the information

Nil

Local government data

Local government recycling data for 2016–17 is published on EPA Victoria's website www.epa.vic.gov.au/your-environment/waste/local-government-kerbside-recycling.

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Queensland by the Hon Steven Miles, Minister for Environment and Heritage Protection and Minister for National Parks and the Great Barrier Reef for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

There were no significant implementation issues arising in 2016–17.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

The primary purpose of the National Environment Protection (Used Packaging Materials) Measure (NEPM) is to establish a statutory framework to ensure that signatories to the Australian Packaging Covenant are not competitively disadvantaged in the marketplace as a result of fulfilling their signatory commitments.

In Queensland, the NEPM is given effect through the Waste Reduction and Recycling Regulation 2011. Covenant program and compliance activities in Queensland are administered by the Department of Environment and Heritage Protection.

As at 30 June 2017, there were 71 compliant Queensland signatories.

Reporting year	Number of covenant signatories
2015–16	70
2016–17	71

Recovery data

Nil (no brand owner was subject to record-keeping obligations under the Queensland Regulation).

Supporting data

Clause 18 of the NEPM requires jurisdictions to undertake annual brand owner surveys. By agreement between the Australian Packaging Covenant and all participating state jurisdictions, no brand owner surveys were undertaken in the reporting year.

Complaints, investigations and prosecutions

No complaints were received during the reporting period.

Statement of interpretation of the information

Nil

Local government data

All local governments are required to provide information relating to paper and packaging collection by 30 September of each year. It is not possible to collect and analyse the detailed data and meet the publishing timeframe of this report. The information gathered forms part of the annual Recycling and Waste Report that is available on the Department of Environment and Heritage Protection's website www.ehp.qld.gov.au.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Western Australia by the Hon Albert Jacob, MLA Minister for Environment; Heritage (21 March 2013 to 16 March 2017) and the Hon Stephen Dawson, MLC Minister for Environment; Disability Services (17 March 2017 to 30 June 2017) for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

On 1 July 2017, the Western Australian Department of Environment Regulation was amalgamated with two other departments: the Department of Water and the Environmental Protection Authority and was renamed the Department of Water and Environmental Regulation.

- In Western Australia, the National Environment Protection (Used Packaging Materials) Measure (NEPM UPM) is implemented by the Department of Water and Environmental Regulation under the National Environment Protection Council (WA) Act 1996, the Environmental Protection Act 1986 and the Environmental Protection (NEPM-UPM) Regulations 2013.
- While the new Australian Packaging Covenant was being considered it was agreed between jurisdictions that no compliance activities would take place until the future of the Covenant was determined.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

During the reporting period, a new Australian Packaging Covenant was being developed and introduced by governments and industry.

The covenant secretariat did not refer signatories registered in Western Australia in relation to non-compliance with the NEPM UPM. Compliance activities under the NEPM UPM were not undertaken while new arrangements were being developed and introduced.

During the reporting period, the number of Western Australian signatories decreased from 47 to 43.

Reporting year	Number of covenant signatories
2015–16	47
2016–17	43

Recovery data

No Western Australian based companies have been required to provide records for auditing.

Supporting data

In August 2015, a meeting of jurisdictions and industry resolved that jurisdictions would not carry out the brand owner audit during the reporting period, and that industry would take responsibility for brand owner audits from 1 July 2016.

Complaints, investigations and prosecutions

No complaints were received, or investigations or prosecutions undertaken, during the 2016–17 reporting period.

Statement of interpretation of the information

Not applicable

Local government data

Local government data will be available at www.dwer.wa.gov.au from June 2018.

South Australia

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for South Australia by the Hon Ian Hunter MLC, Minister for Sustainability, Environment and Conservation, for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The Environment Protection (Used Packaging Materials) Policy 2012 (the Policy) is the legal instrument to enforce the obligations of the NEPM. The Policy provides the regulatory underpinning for the Australian Packaging Covenant. The alignment of the NEPM/policy and the Covenant is the key to providing national consistency in regulatory support for packaging.

In 2016–17, South Australia continued to strengthen its relationship with Industry and other jurisdictions to ensure national consistency around the enforcement of the National Environment Protection (Used Packaging Materials) Measure 2011 (NEPM) and the Environment Protection (Used Packaging Materials Policy 2012 at a state level.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

South Australia is working with the Australian Packaging Covenant to ensure signatories continue to meet their obligations and requirements under the Policy.

Reporting year	Number of covenant signatories
2015–16	55
2016–17	50

Recovery data

One brand owner was required to report during this reporting period. The EPA continues to work with this brand owner to assist them in ensuring compliance with the Policy through the development and implementation of an action plan.

Supporting data

The responsibility for undertaking the brand owner audits has been transferred to industry under the refreshed Australian Packaging Covenant. Industry is now responsible for undertaking an audit on a biennial basis from 2016 onwards. Data gathered through these surveys will be available through the Covenant in the future.

Complaints, investigations and prosecutions

No complaints were received during this reporting period.

Statement of interpretation of the information

South Australia continued to implement the NEPM through the South Australian (Used Packaging Materials) Policy 2012. South Australia continues to promote and support the implementation of the Covenant through a range of initiatives such as collaboration with industry and other jurisdictions on consistent application of the Covenant and NEPM/policy requirements.

Local government data

Local Government data for the 2016–17 reporting period is available on the EPA website
http://www.epa.sa.gov.au/environmental_info/waste_management/solid_waste/used_packaging

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Tasmania by the Hon Elise Archer MP, Minister for Environment and Parks for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The National Environment Protection (Used Packaging Materials) Measure (NEPM) is a state policy under the *State Policies and Projects Act 1993*.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Negotiations with companies that fall within the NEPM threshold to become signatories to the Covenant have not been completed during the reporting period. The NEPM has provided a strong incentive for them to join the Covenant. Tasmania has 15 company signatories and 17 Covenant signatories overall.

Reporting year	Number of covenant signatories
2015–16	17
2016–17	17

Recovery data

No recovery data to report under Clause 16 of the NEPM.

Supporting data

No surveys completed during the reporting period.

Complaints, investigations and prosecutions

No complaints regarding brand owners or Covenant signatories were received in the reporting period, and no investigations or prosecutions were necessary.

Statement of interpretation of the information

Not applicable.

Local government data

None reported for 2016–17.

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Australian Capital Territory by Mr Mick Gentleman MLA for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

The *Waste Management and Resource Recovery Act 2016* (the Waste Act), was passed in August 2016 and replaced the *Waste Minimisation Act 2001*. The new Act came into effect on 1 July 2017.

The Waste Act provides a more robust regulatory framework. Under this Act, waste and recycling facilities will be licensed and waste transporters will be registered and required to report the amounts of waste handled and its destination. The Waste Act also provides the government with significant new powers to establish mandatory codes of practice and to set fees and charges. The ACT Government will be able to use the provisions available under the Waste Act to support the delivery of its waste policy agenda including improving the recovery rates of used packaging. A new instrument is being drafted to implement the Used Packaging Materials NEPM under the Waste Act.

The *Waste Management and Resource Recovery Act Amendment Bill 2017* was tabled in the ACT Legislative Assembly to facilitate the establishment of a Container Deposit Scheme. The scheme is expected to commence in the first half of 2018 and should substantially increase the recovery of beverage container packaging in the ACT and reduce packaging litter by over 25 per cent.

The ACT is a signatory to the Australian Packaging Covenant and to the development of a Container Deposit Scheme, the ACT has undertaken a range of measures, including preliminary regulatory impact research in 2017 on various packaging materials as a part of the Waste Feasibility Study. Australian Capital Territory representatives attend Australian Packaging Covenant meetings and engage with other jurisdictions to work towards reducing packaging waste. The next action plan for the ACT is under development. In the interim, a written update was provided to Australian Packaging Covenant Signatory Services.

The ACT Waste Management Strategy 2011–2025 (the Waste Strategy) sets a clear direction for the management of waste in the ACT with the goal of leading innovation to achieve full resource recovery and a carbon neutral waste sector. Over 2016–17 the ACT Government continued to implement the Waste Strategy and work towards full resource recovery via a suite of measures including education, regulation, operating efficient collection systems, developing and implementing a Container Deposit Scheme and planning for new waste infrastructure.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

Reporting year	Number of covenant signatories
2015–16	5
2016–17	4

Recovery data

Nil

Supporting data

No retailer survey of packaged products was conducted in the ACT in 2016–17.

Complaints, investigations and prosecutions

No complaints, investigations, prosecutions or enforcement actions were recorded and no non-compliant signatories were referred to the ACT Government in 2016–17.

Statement of interpretation of the information

Over 2016–17 the ACT worked with the community and industry to encourage waste avoidance and increase recycling rates.

A 2014 audit of domestic kerbside waste and recycling indicated a recycling capture rate of 66 per cent for households in the ACT (per cent of all recyclables which are captured in the recycling bin) and a recycling contamination rate of 7.8 per cent (non-recyclable material in the waste bin). Recent data shows a Materials Recovery Facility contamination rate of around 11 per cent (non-recyclable items). A waste audit was recently undertaken, and results should be available later in 2017 to reflect the current volume of recyclables and Container Deposit Scheme specific eligible beverage containers at the Materials Recovery Facility and in the waste and recycling kerbside bins.

The implementation of the Container Deposit Scheme is expected to reduce the rate at which beverage containers are disposed of in residual waste collection services.

In 2016–17 the ACT Government's highly successful Actsmart Business Recycling Program continued to support waste reduction and increased recycling by ACT businesses. The program had worked with over 600 businesses by the end of June 2017. Accredited businesses have all achieved a reduction of waste to landfill, some by over 90 per cent, with much of the recovered material being packaging waste.

Local government data

Data for the ACT is available on the Transport Canberra and City Services Directorate website at www.tccs.act.gov.au/recycling-and-waste/resources/reports-and-forms/reports-and-audits.

Northern Territory

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for the Northern Territory by the Hon Lauren Moss Minister for Environment and Natural Resources for the reporting year ended 30 June 2017.

PART 1 IMPLEMENTATION OF THE NATIONAL ENVIRONMENT PROTECTION MEASURE AND ANY SIGNIFICANT ISSUES

- The Northern Territory Government is not a signatory to the Australian Packaging Covenant, as the current covenant remains unlikely to deliver cost-effective outcomes relevant to the unique demographic position of the Northern Territory.
- There are no known major brand owners based in the Northern Territory who are likely to have responsibilities under the NEPM. In the event that Northern Territory brand owners with obligations under the NEPM were found to be non-compliant, there is provision under the *Northern Territory Waste Management and Pollution Control Act* to apply an environmental protection objective to ensure the NEPM can be applied legislatively in the Northern Territory.
- The *Environment Protection (Beverage Containers and Plastic Bags) Act* (the Act) established the Container Deposit Scheme to reduce beverage container waste and increase resource recovery, reuse and recycling, and to regulate the supply of single use, non-biodegradable plastic bags. The Act established a plastic bag ban from September 2011 that prohibits retailers from providing customers with lightweight polyethylene shopping bags with handles from September 2011. The Container Deposit Scheme commenced in January 2012.
- The Northern Territory's environmental grants program encourages community participation in minimising waste and preventing pollution. In 2016–17 the Northern Territory granted more than \$500,000 for projects targeting waste minimisation and recycling.

PART 2 ASSESSMENT OF NATIONAL ENVIRONMENT PROTECTION MEASURE EFFECTIVENESS

There have been no brand owners identified in the Northern Territory who would have obligations under the NEPM. No reporting has been required under clause 16 of the NEPM. No surveys of brand owners were conducted in 2016–17 under clause 18. No complaints have been received, investigations undertaken or prosecutions mounted pursuant to this measure. Of the 17 councils within the Northern Territory, only two provide kerbside recycling services.

The NEPM is considered a less effective mechanism in the Northern Territory, as major contributors to the waste stream are brand owners not based in the Northern Territory. Brand owners who are Covenant signatories are able to meet their national targets more cost effectively in other more populous jurisdictions where well-established recycling infrastructure and high volumes of recyclable materials are available.

Due to the small, dispersed population and distance to markets, kerbside recycling is only considered financially viable in the major population centres of Darwin and Palmerston. Recycling activities in other areas face significant barriers and costs. Voluntary local drop-off recycling schemes are in place in a number of remote communities, but collecting reliable data from these communities is problematic. Where kerbside recycling exists, the NEPM does provide a useful mechanism for obtaining data.

The Northern Territory continues to be committed to the NEPM goal and desired environmental outcomes through its existing programs.

Reporting year	Number of covenant signatories
2015–16	0
2016–17	0

Recovery data

A total of 149,752,726 approved beverage containers were sold in the Northern Territory during 2016–17. Of these, 71,680,286 containers, representing 48 per cent of containers sold were returned, and were recycled and reused through the Container Deposit Scheme, thereby diverted from landfill.

Supporting data

n/a

Complaints, investigations and prosecutions

n/a

Statement of interpretation of the information

n/a

Local government data

n/a



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