

Annual Report 2018–19

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Chair's foreword

It is my privilege to be appointed as the Chair of the National Environment Protection Council (the Council). I would like to acknowledge and thank my predecessor, the Hon Melissa Price MP, who chaired the Council for most of the 2018-19 reporting year.

The Council works to implement the *National Environment Protection Council Act 1994*, to ensure that Australians are protected from air, water, soil and noise pollution, wherever they live in Australia. The key means for achieving this are through the National Environment Protection Measures. These provide national environment standards, guidelines and protocols covering air, site contamination, hazardous waste, pollutants and used packaging.



During 2018-19, Victoria (with support from an inter-jurisdictional working group) continued to lead work to review the reporting standards for ozone, nitrogen dioxide and sulfur dioxide. The Council signalled our intention to vary the National Environment Protection (Ambient Air Quality) Measure, to reflect the latest scientific understanding for health protection from the impacts of air pollution from these pollutants for the Australian community. Public consultation for the impact statement and draft varied measure opened in May 2019, providing the opportunity for the community to review and comment on the supporting evidence to vary these standards.

The National Pollutant Inventory was also reviewed during the reporting period. A discussion paper was released and 374 submissions received. The review will help to enhance the operations of the measure and improve pollution tracking across the country. Since 1998, the National Pollutant Inventory has provided the community, industry and government with free information about substance emissions in Australia. It provides emission estimates for 93 substances and the source and location of these emissions. Emissions and transfers of pollutants reported can relate to air, water or land.

I would like to thank all Council members and those who have supported the Council for their work in 2018-19 and look forward to working with the Council in 2019-20.

A handwritten signature in dark ink, appearing to read 'Sussan Ley'.

Sussan Ley
Chair
National Environment Protection Council

Members of the National Environment Protection Council

From 1 July 2018 to 30 June 2019

Jurisdiction	Member	Duration of membership
Commonwealth	The Hon Sussan Ley MP Minister for the Environment	29 May 2019–30 June 2019
	The Hon Melissa Price MP Minister of the Environment	28 August 2018–28 May 2019
	The Hon Josh Frydenberg MP Minister for the Environment and Energy	19 July 2016–27 August 2018
New South Wales	The Hon Matt Kean MP Minister for Energy and Environment	2 April 2019–30 June 2019
	The Hon Gabrielle Upton MP Minister for Environment	30 January 2017–1 April 2019
Victoria	The Hon Lily D'Ambrosio MP Minister for Energy, Environment and Climate Change	Full year
Queensland	The Hon Leeanne Enoch MP Minister for Environment and Great Barrier Reef	Full year
Western Australia	The Hon Stephen Dawson MLC Minister for Environment	Full year
South Australia	The Hon David Speirs MP Minister for Sustainability, Environment and Conservation	Full year
Tasmania	The Hon Elise Archer MP Minister for Environment	Full year
Australian Capital Territory	Mr Mick Gentleman MLA Minister for the Environment and Heritage	Full year
Northern Territory	The Hon Eva Lawler MLA Minister for Environment and Natural Resources	Full year

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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:

1. to make National Environment Protection Measures
2. 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 former 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.

The NEPC Executive Officer for the 2018–19 reporting year, was Mr Adam Carlon.

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) are to be held on a regular basis—at least annually, and concurrently with NEPC Committee meetings.
- 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 six pollutants - carbon monoxide, lead, particulates, nitrogen dioxide, sulfur dioxide and ozone.

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'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 2018–19 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

NEPM details

Title: National Environment Protection (Air Toxics) Measure.

Made by Council: 3 December 2004.

Commencement date: 20 December 2004 (advertised in 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 NEPM 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 so no monitoring is undertaken.
New South Wales	<ul style="list-style-type: none"> The NEPM is implemented under the <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i> 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 <i>Environmental Protection Regulation 2008</i>, 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 managed 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 1998</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 2018 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 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 NEPM

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 2018-19 reporting period at Springwood in South East Queensland and central Gladstone including ambient monitoring of benzene, toluene, xylenes and formaldehyde using DOAS instrumentation.

In Western Australia, the Department of Water and Environmental Regulation (DWER) continued field trials for its Remote Air Pollution Infrared Detector (RAPID) in the Perth metropolitan region to determine its suitability for air quality investigations.

An updated emissions inventory for the Perth metropolitan region was published in June 2018 and is available at <https://www.der.wa.gov.au/our-work/programs/460-perth-air-emissions-study-2011-2012>. The inventory includes air toxics and provides additional information in identifying and prioritising air toxic sources in this area.

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

Because 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 NEPM 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. As no jurisdiction has recorded monitoring results above these levels historically, most jurisdictions did not report results.

In 2018-19 the Commonwealth undertook a survey of jurisdictional needs and activity under this NEPM. Responses from jurisdictions indicated that while the Air Toxics NEPM does fulfil a useful role, its ability to adequately address air toxics in Australia could be improved. Further consideration of this NEPM, and the national management of air toxics, will be undertaken.

PART 5—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 1:

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Annex 9:	Northern Territory	p. 62

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

NEPM details

Title: National Environment Protection (Ambient Air Quality) Measure

Made by Council: 26 June 1998

Commencement Date: 8 July 1998 (advertised in 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 well-being.

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 NEPM 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 <i>Protection of the Environment Operations (General) Regulation 2009</i> and the <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i>.
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 <i>Environmental Protection Regulation 2008</i>, 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 <i>Environment Protection Policy (Air Quality) 2004</i>, the <i>Environmental Management and Pollution Control (Distributed Atmospheric Emissions) Regulations 2007</i> 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 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 1988</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 2018 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 issues reported.
New South Wales	<ul style="list-style-type: none"> Four of 28 stations did not comply with the NEPM as they recorded less than 75% data availability for pollutants over any three-month period.
Victoria	<ul style="list-style-type: none"> Data capture targets were not achieved for ozone at Dandenong, Melton, Mooroolbark or Point Cook (these stations do not operate across the full year). Data capture targets were not met at number of stations for some pollutants due to instrumentation issues.
Queensland	<ul style="list-style-type: none"> Monitoring began at a new monitoring site at Southport on the Gold Coast in South East Queensland from February 2018.
Western Australia	<ul style="list-style-type: none"> No issues reported.
South Australia	<ul style="list-style-type: none"> Compliance with NEPM standards and goals for some pollutants at some sites could not be demonstrated due to data capture targets not being achieved. This was due to technical issues with instrumentation and equipment breakdowns.
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 NEPM

During 2018, jurisdictions progressed work on updating the standards for NEPM pollutants other than particles, for which updated standards were agreed by Ministers in 2015.

In September 2017, the Commonwealth legislated national product emission standards for non-road spark ignition engines and equipment such as outdoor power equipment and marine outboard engines. These standards will be phased in through to 2020, supporting industry transition by commencing with import requirements before moving to supply requirements.

Most jurisdictions continued to focus on programs that improve fuel quality and 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, with some of these activities now requiring licensing or otherwise being brought into a formal legislative or approvals framework. Alternative monitoring technologies were also trialled in some jurisdictions, with some noting the need to replace ageing equipment.

PART 4—ASSESSMENT OF NEPM 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.

Improvements in the data capture levels, and new or replacement stations becoming operational this reporting year, allowed 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 AAQ 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

NEPM details

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

Made by Council: 10 December 1999

Commencement date: 22 December 1999 (advertised in 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 NEPM 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 operates under guidelines issued 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). (Replaced by the State Environment Protection Policy (Waters) in October 2018.) the <i>Environment Protection (Industrial Waste Resource) Regulations 2009</i>. 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>Environmental Protection Act 1994</i> and the <i>Planning Regulation 2017</i> 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 <i>Contaminated Sites Regulations 2006</i> 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 <i>Environmental Management and Pollution Control (Underground Petroleum Storage Systems) Regulations</i> 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 NT planning process, the Northern Territory Contaminated Land Guideline (2017), legislative directive environmental audits and voluntary audits.

Implementation issues arising

Contamination by per- and polyfluoroalkyl substances (PFASs) including perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) remained a focus across all jurisdictions.

The general approaches in the ASC NEPM underpin the collaborative work among all jurisdictions on the PFAS National Environmental Management Plan (NEMP), a uniform and consistent approach to assessment, management and remediation. Further national guidance for version 2.0 of the PFAS NEMP was developed, together with extensive stakeholder engagement and consultation, across 2018-19. The PFAS NEMP assists landowners, operators, and industry who are responding to contamination, as well as communities and governments, by providing consistent national standards and guidance.

Many jurisdictions were of the view that amending NEPC processes to permit easier ability to update and make changes, such as adding criteria for emerging contaminants (such as PFAS) and deriving new Ecological Investigation Levels (EILs) would be strongly desirable. Jurisdictions also suggested it would be helpful to expand the NEPM to include site remediation and management. Such issues should be considered during the next review of the NEPM.

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	<ul style="list-style-type: none"> • No issues reported. • Continued to conduct site assessments in accordance with the NEPM.
New South Wales	<ul style="list-style-type: none"> • Identified the limited number of Ecological Investigation Levels (EILs) for contaminants and the need for a consistent framework for the derivation and adoption of new EILs.
Victoria	<ul style="list-style-type: none"> • Continued to question the adequacy of the Health Investigation Levels (HILs) for lead in soil for the protection of human health. • Noted the need to continually update guidance to minimise discrepancies in subsequently developed policies and frameworks.
Queensland	<ul style="list-style-type: none"> • Again noted that the lack of adequate guidance for particular common types of contamination including fluorinated organic chemicals that are now commonly encountered on contaminated sites is limiting the effective implementation of the NEPM.
Western Australia	<ul style="list-style-type: none"> • Noted the limited number of EILs provided in the NEPM is a major limitation to consistency in implementation. • Raised the need for periodic review of the guidance in the context of advances in scientific information and updated technical information.
South Australia	<ul style="list-style-type: none"> • Again raised the need to plan for the required 10-year review of the NEPM to ensure that it incorporates new scientific knowledge and updated technical information and maintain credibility as a protector of the environment and human health.
Tasmania	<ul style="list-style-type: none"> • Supports continued development of the NEPM including guidance on managing emerging contaminants of concern and ongoing review/ updating of criteria.
Australian Capital Territory	<ul style="list-style-type: none"> • Requested changes to NEPM development to allow for the inclusion of criteria for emerging contaminants outside of the formal review process.
Northern Territory	<ul style="list-style-type: none"> • There are increases in the inappropriate use of the ASC NEPM in illegal dumping matters to justify the illegal dumping of waste.

PART 3—JURISDICTIONAL REPORT ON ACTIVITIES UNDER THE NEPM

The NEPM provides consistent, science based, and effective national methodology and guidance that is widely used across Australia by industry, site owners, and governments.

Most jurisdictions have amended, or are in the process of updating, 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 organic pollutants, such as per-and polyfluoroalkyl substances such as PFOS, PFOA, and PFHxS.

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 NEPM EFFECTIVENESS

The NEPM continues to provide consistent, consolidated guidance to professional practitioners in assessing site contamination.

The 2013 amendment to the NEPM is now almost fully implemented by all jurisdictions. 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. 114
Annex 2:	New South Wales	p. 115
Annex 3:	Victoria	p. 116
Annex 4:	Queensland	p. 118
Annex 5:	Western Australia	p. 120
Annex 6:	South Australia	p. 121
Annex 7:	Tasmania	p. 123
Annex 8:	Australian Capital Territory	p. 124
Annex 9:	Northern Territory	p. 125

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

National Environment Protection (Diesel Vehicles Emissions) Measure

PART 1 — GENERAL INFORMATION

NEPM details

Title: National Environment Protection (Diesel Vehicle Emissions) Measure

Made by Council: 29 June 2001

Commencement date: 18 July 2001 (advertised in 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 NEPM 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>.
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 <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i> 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 <i>Environment Protection (Vehicle Emissions) Regulations 2013</i> 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 <i>National Environment Protection Council (Queensland) Act 1994</i> provides a framework to implement the NEPM. 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 <i>Road Traffic (Vehicles) Regulations 2014</i>, 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 <i>Road Transport (Vehicle Registration) Regulation 2000</i>, implemented by Access Canberra.
Northern Territory	<ul style="list-style-type: none"> Vehicle performance standards are enforced under the Motor Vehicles Act implemented by the Department of Transport.

Implementation issues arising

Table 2 summarises the implementation issues that arose throughout the 2018-19 reporting year. For implementation activities refer to jurisdictional reports as listed in Appendix 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. All Diesel NEPM-funded programs have now ceased.
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.
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 NEPM

Amendments to fuel standards under the Commonwealth Fuel Quality Standards Act 2000 to better align with international best practice and to further reduce vehicle emissions remain under consideration.

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.

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

PART 4—ASSESSMENT OF NEPM EFFECTIVENESS

While there are some limitations on the ability to quantify the overall effectiveness of the NEPMbased 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. 128
Annex 2:	New South Wales	p. 129
Annex 3:	Victoria	p. 134
Annex 4:	Queensland	p. 136
Annex 5:	Western Australia	p. 139
Annex 6:	South Australia	p. 142
Annex 7:	Tasmania	p. 144
Annex 8:	Australian Capital Territory	p. 146
Annex 9:	Northern Territory	p. 148

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

NEPM 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 NEPM 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 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	<ul style="list-style-type: none"> The key legislative instruments are the Waste Management Policy (Movement of Controlled Waste between States and Territories) 2001 made under the <i>Environment Protection Act 1970</i>.
Queensland	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> The primary legislative instruments are the <i>Environmental Protection Act 1986</i> and the <i>Environmental Protection (Controlled Waste) Regulations 2004</i>.
South Australia	<ul style="list-style-type: none"> The NEPM is implemented by the Environment Protection (Movement of Controlled Waste) Policy 2014 under the <i>Environment Protection Act 1993</i>.
Tasmania	<ul style="list-style-type: none"> The NEPM is implemented under the <i>Environmental Management and Pollution Control Act 1994</i>.
Australian Capital Territory	<ul style="list-style-type: none"> The key legislative instruments are the <i>Environment Protection Act 1997</i> and the <i>Environment Protection Regulations 2005</i>.
Northern Territory	<ul style="list-style-type: none"> The key legislative instruments are the <i>Waste Management and Pollution Control Act 1998</i> and the <i>Transport of Dangerous Goods by Road and Rail (National Uniform Legislation) Act 2010</i>.

Implementation issues arising

No implementation issues were reported by jurisdictions.

PART 3—JURISDICTIONAL REPORT ON ACTIVITIES UNDER THE NEPM

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 reviewing or updating their waste management systems and processes to enable electronic tracking of the transport of industrial waste between states and territories 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 2018–30 June 2019

Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ex-Terr*	Total
A	Plating & heat treatment	7.18	0.00	310.54	0.00	0.00	0.00	0.00	0.00	N/A	317.72
B	Acids	21709.72	445.00	183.08	31.00	58.74	6.00	0.00	0.00	N/A	22433.54
C	Alkalis	17.68	1207.00	286.72	0.00	24.59	0.20	0.00	0.00	N/A	1536.19
D	Inorganic chemicals	26823.17	18600.00	4722.32	0.00	348764.28	3906.83	0.00	0.00	N/A	402816.6
E	Reactive chemicals	3.91	5.00	6.13	0.00	0.00	0.20	0.00	0.00	N/A	15.24
F	Paints, resins, inks, organic sludges	1544.55	4622.00	755.85	39.34	203.66	2.00	0.00	0.00	N/A	7167.4
G	Organic solvents	324.83	1587.00	269.30	0.00	103.22	30.00	0.00	0.00	N/A	2314.35
H	Pesticides	8.35	500.00	1944.67	0.00	19.58	0.00	0.00	0.00	N/A	2472.6
J	Oils	5168.20	1680.00	34372.27	282.32	3300.13	65.00	337.65	335.24	N/A	45540.81
K	Putrescible/organic waste	7479.90	1373.00	11090.54	37.19	11.00	92.00	12.50	0.00	N/A	20096.13
L	Industrial washwater	0.00	4124.00	0.00	1206.00	0.00	0.00	0.00	0.00	N/A	5330
M	Organic chemicals	672.67	2431.00	1025.98	0.00	9.31	0.15	0.00	0.00	N/A	4139.11
N	Soil/sludge	1146.37	7873.00	43139.95	0.00	11249.80	49.50	81.59	0.00	N/A	63540.21
R	Clinical & pharmaceutical	491.72	1199.00	1823.37	0.00	139.07	0.80	242.63	0.00	N/A	3896.59
T	Misc.	648.82	7819.00	13725.80	0.00	607.60	0.00	1.80	0.00	N/A	22803.02
	Total (tonnes)	66046.07	53465.00	113656.52	1595.85	364490.98	4154.48	674.37	335.24	N/A	604419.51

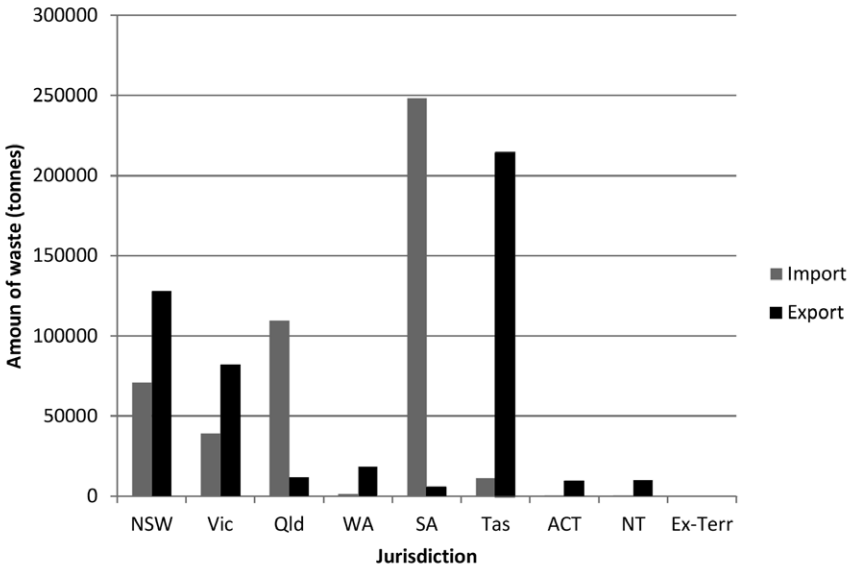
Note: Information regarding External Territories (Ex-Terr) has been provided only since the reporting year 2009–10.

Table 3: Summary of total movements of controlled waste within Australia, exports by states and territories for the period, 1 July 2018–30 June 2019

Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ex-Terr*	Total
A	Plating & heat treatment	310.54	2.59	4.10	0.00	0.00	0.00	0.49	0.00	0.00	317.72
B	Acids	441.30	21685.16	21.32	30.19	151.00	0.00	0.35	98.22	6.00	22433.54
C	Alkalies	571.72	9.61	8.19	0.00	0.00	0.00	0.18	946.29	0.20	1536.19
D	Inorganic chemicals	16431.01	28944.97	5475.32	16696.83	2253.48	332236.83	446.45	332.11	1.60	402816.6
E	Reactive chemicals	5.00	9.49	0.27	0.00	0.00	0.00	0.28	0.00	0.20	15.24
F	Paints, resins, inks, organic sludges	3443.85	1324.75	1446.89	20.00	621.00	71.50	67.02	170.39	2.00	7167.4
G	Organic solvents	1183.44	334.17	349.57	103.93	198.24	96.00	17.00	2.00	30.00	2314.35
H	Pesticides	1642.20	379.99	65.87	360.00	23.90	0.00	0.64	0.00	0.00	2472.6
J	Oils	33859.85	1948.05	619.62	345.32	93.64	115.56	3359.32	5134.45	65.00	45540.81
K	Putrescible/organic waste	12329.04	1656.82	20.86	37.00	90.00	0.00	5822.22	48.19	92.00	20096.13
L	Industrial washwater	2808.00	0.00	105.00	0.00	690.00	96.00	0.00	1631.00	0.00	5330.00
M	Organic chemicals	811.76	973.58	1543.35	6.63	494.46	55.06	33.30	211.00	0.15	4139.11
N	Soil/sludge	56701.94	5379.55	373.73	293.62	124.59	53.00	128.78	435.50	49.50	63540.21
R	Clinical & pharmaceutical	2594.00	33.92	257.42	253.00	337.00	30.75	294.76	94.94	0.80	3896.59
T	Misc.	19598.98	346.80	107.44	1.96	2130.00	6.00	210.53	399.48	1.80	22803.02
	Total (tonnes)	152732.63	63029.45	10398.95	18148.48	7207.31	332760.70	10381.32	9503.57	249.25	604419.51

Note: Information regarding External Territories (Ex-Terr) has been provided only since the reporting year 2009–10.

Figure 1: Tonnage of controlled waste moved within Australia 2018-19*



*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 285.09 tonnes of waste exported from Australia's External Territories to be visually represented).

Figure 2: Tonnage of controlled waste moved within Australia 1999-2019

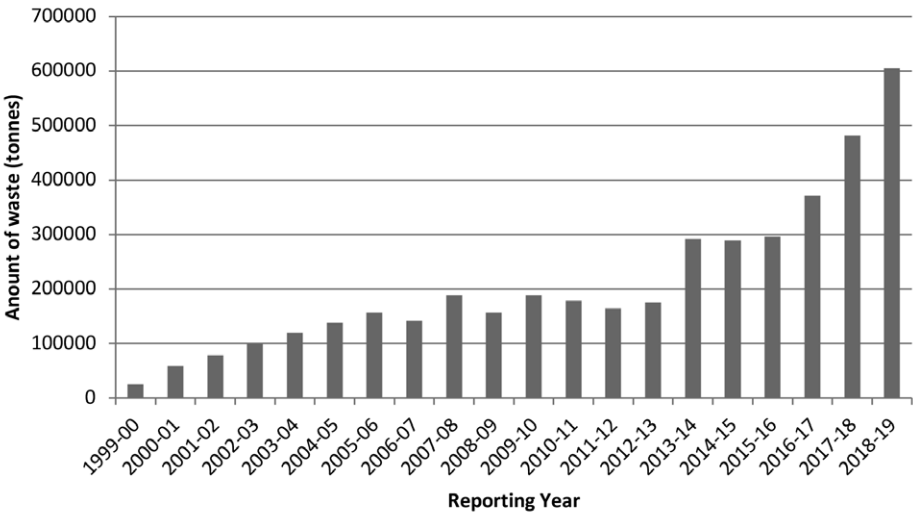
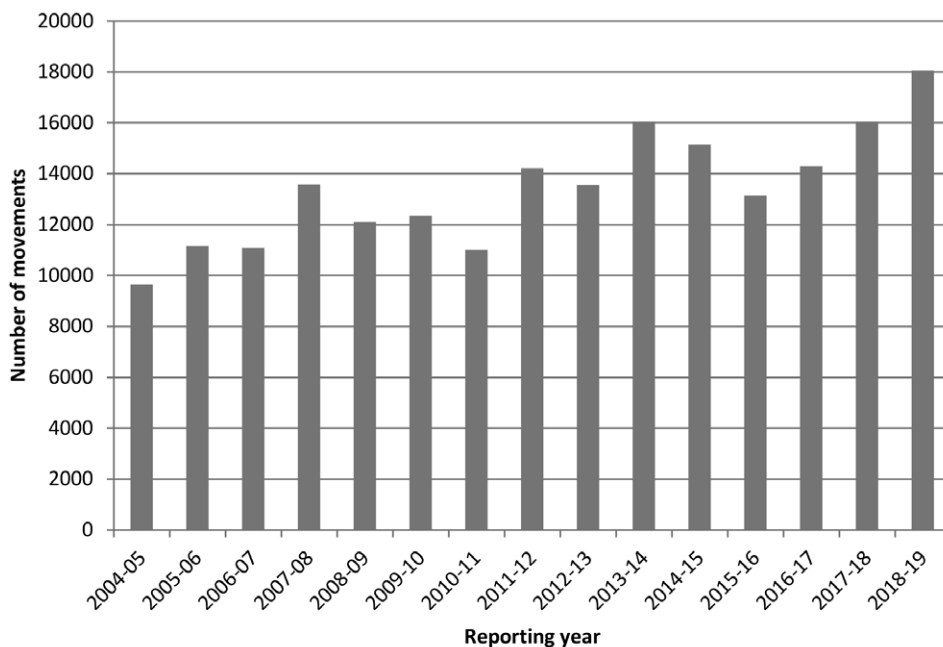


Figure 3: Number of movements of controlled waste within Australia 2004–19*



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

PART 4—ASSESSMENT OF NEPM 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. However, inconsistencies between jurisdictions (e.g. in terms of waste classification, waste codes, terminology) and outdated waste tracking systems introduce significant data uncertainty.

There remains a high level of communication and cooperation between jurisdictions for this NEPM.

PART 5—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 5:

Annex 1:	Commonwealth	p. 152
Annex 2:	New South Wales	p. 153
Annex 3:	Victoria	p. 157
Annex 4:	Queensland	p. 160
Annex 5:	Western Australia	p. 163
Annex 6:	South Australia	p. 166
Annex 7:	Tasmania	p. 169
Annex 8:	Australian Capital Territory	p. 172
Annex 9:	Northern Territory	p. 175

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

NEPM 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 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, and*
- (b) disseminate the information collected to all sectors of the community in a useful, accessible and understandable form.*

In summary, the National Pollutant Inventory (NPI) NEPM provides the framework for the development and establishment of the NPI 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; and*
 - (ii) ambient marine, estuarine and fresh water quality;*
- (b) the minimisation of environmental impacts associated with hazardous wastes; and*
- (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 NEPM 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 key legislative instrument is the <i>Protection of the Environment Operations (General) Regulation 2009</i> under the <i>Protection of the Environment Operations Act 1997</i>.
Victoria	<ul style="list-style-type: none"> The key legislative instrument is the Waste Management Policy (National Pollutant Inventory) 2012 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> and the <i>Environmental Protection Regulation 2008</i>.
Western Australia	<ul style="list-style-type: none"> The key legislative instrument is the <i>Environmental Protection (NEPM – NPI) Regulations 1998</i> under the <i>Environmental Protection Act 1986</i>.
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> and is implemented through the <i>Environmental Management and Pollution Control Act 1993</i>.
Australian Capital Territory	<ul style="list-style-type: none"> The key legislative instrument is the <i>Environment Protection Act 1997</i>.
Northern Territory	<ul style="list-style-type: none"> 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 2017-18 (the NPI 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 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"> Redesigned the NPI homepage to increase usability and provide a direct link to NPI facility locations on the National Map. Leading the current review of the NPI.
New South Wales	<ul style="list-style-type: none"> The NPI 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, however there are opportunities for further improvements.
Victoria	<ul style="list-style-type: none"> Continued concerns with NPI data quality and NEPM enforceability, which will be raised during the review.
Queensland	<ul style="list-style-type: none"> Will continue to raise opportunities to improve the effectiveness and implementation of the NPI during the review.
Western Australia	<ul style="list-style-type: none"> Work on the Perth Air Emissions Study 2016 was undertaken during the period to update the 2011-2012 aggregated emissions data for the greater Perth metropolitan region.
South Australia	<ul style="list-style-type: none"> A detailed air emissions inventory continues to be a strategic priority for both the NPI and the SA EPA.
Tasmania	<ul style="list-style-type: none"> NPI funding and support is an ongoing issue. Updated NPI emissions estimation techniques and other resources continue to be a critical need.
Australian Capital Territory	<ul style="list-style-type: none"> One-on-one training sessions continued to work successfully.
Northern Territory	<ul style="list-style-type: none"> Continued inadequate funding to allow aggregate emissions data modelling as required by the NEPM.

PART 3—ASSESSMENT OF NEPM EFFECTIVENESS

Memoranda of Understanding (MoUs) have been signed at heads of agency level between each jurisdiction and the Commonwealth. An MoU was in place to 30 June 2019.

Website and Public Awareness

Reporting information is available on the NPI website at <http://www.npi.gov.au>. The number of visitors to the NPI website increased from 306,703 in 2017-18 to 361,202 in 2018-19 with 3,717 views of the NPI dataset on the data.gov.au website.

The use of the NPI database by non-government organisations and the media, often focusing on specific industry sectors or facilities, is increasing. There is a clear need for improving contextual information and interpretation of NPI data to facilitate better understanding within the community.

On-line reporting

The Commonwealth continued to maintain the NPI website, including redesigning the NPI homepage during the reporting period, and database search engine. This work ensured that relevant and up to date information is accessible to the public and other key stakeholders.

While the online reporting system training has been well received, it is acknowledged that software errors remain and further training is essential.

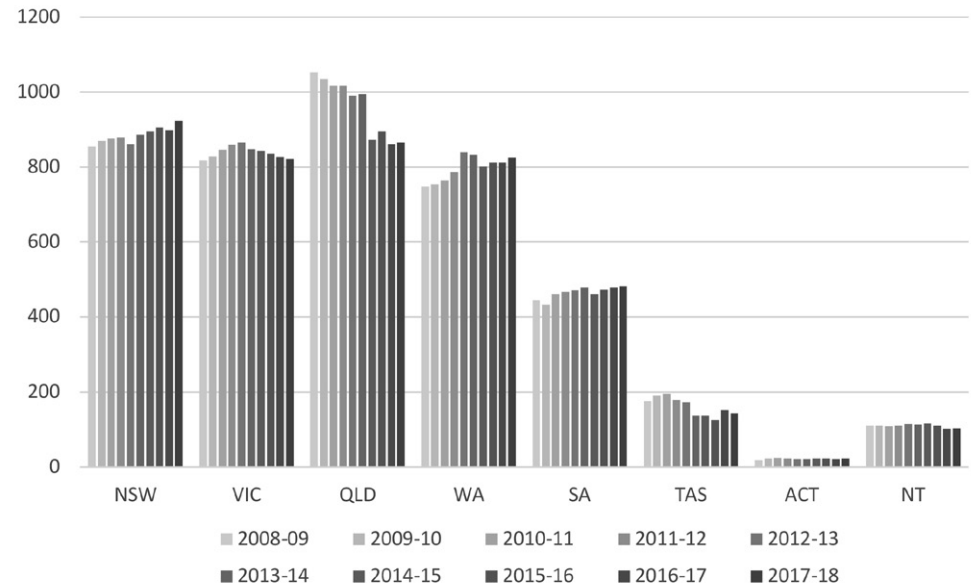
Most jurisdictions have conducted industry training programs to assist reporters to use the Online Reporting System. These training programs vary from one-on-one sessions with new reporters to more formal group sessions. There is a need for continued training due to the continued high level of turnover in industry, new small business enterprises and staff within jurisdictions.

Industry facility reporting

The Commonwealth published the 2017–18 National Pollutant Inventory (NPI) on 29 March 2019. The number of facilities reporting to the NPI rose from 4162 in 2016–17 to 4187 in 2017–18.

Figure 1 below shows the number of facilities reporting to the NPI in each jurisdiction over the past 10 years.

Figure 1: Number of reporting facilities in each jurisdiction by year since 2008-09



PART 4—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 6:

Annex 1:	Commonwealth	p. 178
Annex 2:	New South Wales	p. 181
Annex 3:	Victoria	p. 183
Annex 4:	Queensland	p. 185
Annex 5:	Western Australia	p. 186
Annex 6:	South Australia	p. 188
Annex 7:	Tasmania	p. 190
Annex 8:	Australian Capital Territory	p. 192
Annex 9:	Northern Territory	p. 193

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

NEPM 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 NEPM 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's implementing legislation applies only to its jurisdictional territories and to brand owner companies with over 50% government ownership such as Australia Post.
New South Wales	<ul style="list-style-type: none"> The NEPM is implemented by the <i>Protection of the Environment Operations (Waste) Regulation 2014</i>.
Victoria	<ul style="list-style-type: none"> The NEPM is implemented by the Waste Management Policy (Used Packaging Materials) 2006, under the <i>Environment Protection Act 1970</i>.
Queensland	<ul style="list-style-type: none"> The NEPM is implemented by the <i>Waste Reduction and Recycling Regulation 2011</i>.
Western Australia	<ul style="list-style-type: none"> The NEPM is implemented by the <i>Environmental Protection (NEPM-UPM) Regulations 2013</i> under the <i>Environmental Protection Act 1986</i>.
South Australia	<ul style="list-style-type: none"> The NEPM is legally enforced by the Environment Protection (Used Packaging Materials) Policy 2012 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>.
Australian Capital Territory	<ul style="list-style-type: none"> The NEPM will be implemented as a code of practice under the <i>Waste Management and Resource Recovery Act 2016</i>
Northern Territory	<ul style="list-style-type: none"> An Australian Packaging Covenant Organisation audit has identified businesses based in the NT which 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

The number of signatories to the Australian Packaging Covenant significantly increased in 2018-19 from the previous reporting year. This increase is a result of the brand owner audit undertaken by APCO in 2018 to identify non-signatory organisations who were not currently meeting their obligations under the NEPM. In total, an additional 558 businesses became signatories to the Covenant in 2018-19 through the brand owner audit process.

Some jurisdictions have initiated a process, including a behaviour change program, to identify free riders and start them reporting on their obligations. No individual issues were reported by jurisdictions so the summary of issues table has not been included.

PART 3—JURISDICTIONAL REPORT ON ACTIVITIES UNDER THE NEPM

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.

All jurisdictions continued NEPM advice, collaboration, program and compliance activities with the Australian Packaging Covenant Organisation. All jurisdictions also began or maintained their own waste reduction or recycling programs.

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

Table 2: Australian Packaging Covenant signatories at 30 June 2019.

ACT	9
NT	1
NSW	607
QLD	121
SA	79
TAS	21
VIC	519
WA	105
TOTAL	1462

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 as listed in Appendix 7.

Complaints, investigations and prosecutions

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

PART 4—ASSESSMENT OF NEPM EFFECTIVENESS

Major reforms to the operation of the APC have been initiated in response to a comprehensive review by the Commonwealth Government. These reforms include changes to APC'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 APC is working to refine the process.

At the end of June 2019, there were 1462 covenant signatories.

Covenant signatories showed improvement in key performance reporting indicators related to supporting market development for recycled content in packaging and demonstrating innovation in developing and continuing sustainability initiatives.

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 2 of the 17 NT councils have kerbside recycling.

PART 5—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 7:

Annex 1:	Commonwealth	p. 196
Annex 2:	New South Wales	p. 198
Annex 3:	Victoria	p. 200
Annex 4:	Queensland	p. 202
Annex 5:	Western Australia	p. 203
Annex 6:	South Australia	p. 204
Annex 7:	Tasmania	p. 205
Annex 8:	Australian Capital Territory	p. 209
Annex 9:	Northern Territory	p. 211

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 Sussan Ley MP, Minister for the Environment for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The National Environment Protection (Air Toxics) Measure (Air Toxics NEPM) provides a nationally consistent framework for the monitoring and reporting of specified air toxics in a range of locations in Australia. It stipulates methods and criteria for monitoring ambient concentrations of air toxics in areas close to sites where those air toxics are known to be emitted.

PART 2 — ASSESSMENT OF NEPM 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 these air toxics in Australia. This is primarily achieved through state and territory agencies' monitoring and reporting of data.

In April 2018, Australian Environment Ministers endorsed a work plan under the National Clean Air Agreement, which included a review of the need for the Air Toxics NEPM. In 2018 – 19 the Commonwealth undertook a survey of jurisdictional needs for and activity under this NEPM, the results of which will inform future work to review this NEPM. Responses from jurisdictions indicated that while the Air Toxics NEPM does fulfil a useful role, its ability to adequately address air toxics in Australia could be improved.

Any potential changes to this NEPM would need to consider outcomes from the review of the *National Environment Protection Council Act 1994*.

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. Matt Kean MP, Minister for Energy and Environment, for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

Legislative, regulatory and administrative framework

The implementation of the National Environment Protection (Air Toxics) Measure (NEPM) in NSW is coordinated by the Environment Protection Authority and the Department of Planning, Industry and Environment. 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. NSW 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). NSW 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*, the *Protection of the Environment Operations (Clean Air) Regulation 2010* and the *Protection of the Environment Operations (General) Regulation 2009*, provide the regulatory framework for action to address air emissions including managing air toxics in New South Wales.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

NSW 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 in 2008 and 2009. The monitoring demonstrated that the five NEPM air toxics were well below the NEPM monitoring investigation levels that would trigger the NEPM requirement for ongoing ambient air toxics monitoring and no further monitoring has been required.

Reporting of monitoring of air toxics

NSW 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(a)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.

NEPM-compliant sampling and analysis methods were used.

Tables 1 to 5 of the NSW implementation report for the reporting year ended 30 June 2010 and reproduced below, summarise the monitoring results for the five air toxics – benzene, benzo(a)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(a)pyrene, with levels of approximately 65 per cent of the NEPM monitoring investigation level.

Results of NSW Air Toxics Monitoring 2008-2009

Tables 1 - 5: Monitoring results for benzene, benzo(a)pyrene as a marker for polycyclic aromatic hydrocarbons, formaldehyde, toluene and xylenes 2008-2009. 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 www.nepc.gov.au/system/files/resources/ee20bb51-e1cd-82b4-559c-699771b152e7/files/nepc-annual-report-09-10.pdf.

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(a)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 ng/m ³
Annual average concentration (as arithmetic mean)	0.21 ng/m ³
Arithmetic Standard Deviation of 24-hour average concentrations	0.10 ng/m ³
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 2019.

PART 1 — IMPLEMENTATION OF THE NEPM 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*.

There were no implementation issues during the 2018 reporting year.

PART 2 — ASSESSMENT OF NEPM 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 2018, 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 2018, 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 Leeanne Enoch MP, Minister for Environment and the Great Barrier Reef, Minister for Science, and Minister for the Arts for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Air Toxics NEPM specifies the reporting year as the year ending on 31 December and the results reported in this report are for the year ending on 31 December 2018 in accordance with the NEPM.

In Queensland, the Air Toxics 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 2018, monitoring of polycyclic aromatic hydrocarbons (including benzo[a]pyrene) was conducted at the Fisherman's Landing and Auckland Point monitoring sites in the Gladstone region from May to June 2018. Fisherman's Landing is an industrial area north of Gladstone, while the Auckland Point site is located in central Gladstone, close to harbour storage and loading operations.

The Department of Environment and Science (DES) continued to monitor benzene, toluene, xylenes and formaldehyde using open path Differential Optical Absorption Spectroscopy (DOAS) instrumentation at Springwood in South East Queensland and in central Gladstone in the 2018-2019 reporting period.

PART 2—ASSESSMENT OF NEPM 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 the differential optical absorption spectroscopy (DOAS) technique at its ambient air quality monitoring network sites of Springwood in South East Queensland and in central Gladstone. Although the DOAS monitoring methodology is not in accordance with the protocols set out in the 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 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 Air Toxics NEPM monitoring investigation levels provide a defensible benchmark for assessing measured concentrations.

Identification of Sites

Analysis of potential sites for monitoring air toxics identified sites where significantly elevated concentrations of one or more of the air toxics are likely to occur (Stage 1 sites) and where the potential for significant population exposure to air toxics exists (Stage 2 sites). The analysis identified roadside and industrial locations that were considered to have the greatest potential for significant population exposure to air toxics.

Reporting of Monitoring of Air Toxics

Air toxics monitored in the 2018-19 reporting period included polycyclic aromatic hydrocarbons (including benzo[a]pyrene) at the Fisherman's Landing monitoring site, an industrial area north of Gladstone, and the Auckland Point (central Gladstone) site, from 4 May 2018 to 5 June 2018. Ambient monitoring of benzene, toluene, xylenes and formaldehyde using DOAS instrumentation continued at Springwood in South East Queensland and in central Gladstone in 2018.

Benzo[a]pyrene monitoring at the Fisherman's Landing and Auckland Point sites in the Gladstone region between May and June 2018 showed that average concentrations for the one-month sampling period were 18.4 per cent and 4.2 per cent, respectively, of the Air Toxics NEPM annual average monitoring investigation level of 0.3 ng/m³.

Monitoring results from South East Queensland and Gladstone monitoring sites for the 2018 calendar year are provided in Tables 2-6 below. These results indicate that levels of air toxics are well below the Air Toxics NEPM investigation levels.

Table 2: Monitoring Results for Benzene

	Springwood	Central Gladstone
Air Toxic	Benzene	Benzene
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/18 to 31/12/18	1/1/18 to 31/12/18
Number of valid results	320	196
Maximum 24-hour average concentration	0.0023 ppm	0.0020 ppm
Annual average concentration (as arithmetic mean)	0.0009 ppm	0.0014 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0004 ppm	0.0002 ppm
Number of times monitoring investigation level exceeded	0	0

Table 3: Monitoring Results for Toluene

	Springwood	Central Gladstone
Air Toxic	Toluene	Toluene
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/18 to 31/12/18	1/1/18 to 31/12/18
Number of valid results	339	319
Maximum 24-hour average concentration	0.0077 ppm	0.0041 ppm
Annual average concentration (as arithmetic mean)	0.0021 ppm	0.0022 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0011 ppm	0.0005 ppm
Number of times monitoring investigation level exceeded	0	0

Table 4: Monitoring Results for Xylenes

	Springwood	Central Gladstone
Air Toxic	Xylenes	Xylenes
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/18 to 31/12/18	1/1/18 to 31/12/18
Number of valid results	340	338
Maximum 24-hour average concentration	0.0152 ppm	0.0122 ppm
Annual average concentration (as arithmetic mean)	0.0078 ppm	0.0047 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0024 ppm	0.0011 ppm
Number of times monitoring investigation level exceeded	0	0

Table 5: Monitoring Results for Formaldehyde

	Springwood	Central Gladstone
Air Toxic	Formaldehyde	Formaldehyde
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/18 to 31/12/18	1/1/18 to 31/12/18
Number of valid results	293	339
Maximum 24-hour average concentration	0.0100 ppm	0.0067 ppm
Annual average concentration (as arithmetic mean)	0.0053 ppm	0.0029 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0016 ppm	0.0006 ppm
Number of times monitoring investigation level exceeded	0	0

Table 6: Monitoring Results for Benzo[a]pyrene

	Fisherman's Landing	Auckland Point
Air Toxic	Benzo[a]pyrene	Benzo[a]pyrene
Monitoring method	TO-13A	TO-13A
Period of monitoring	4/5/18 to 5/6/2018	4/5/18 to 5/6/2018
Number of valid results†	1	1
Maximum monthly average concentration†	0.055 ng/m ³	0.013 ng/m ³
Average concentration (as arithmetic mean)	0.055 ng/m ³	0.013 ng/m ³
Arithmetic Standard Deviation of monthly average concentrations†	N/A	N/A
Number of times monitoring investigation level exceeded	0	0

† monthly, rather than 24-hour, sampling was conducted; one sample was collected over a one-month period

Reporting on Assessment and Action if any planned or taken to manage air toxics

From the monitoring results for 2018 reporting period, together with past results, there is no evidence that the Air Toxics NEPM monitoring investigation levels would be exceeded in ambient air in Queensland. Consequently, 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. Stephen Dawson, MLC Minister for Environment; Disability Services; Electoral Affairs for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In Western Australia, the National Environment Protection (Air Toxics) Measure is implemented by the Department of Water and Environmental Regulation (DWER) 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 (AQMP), a non-statutory mechanism established by the Western Australian Government. The objective of the AQMP is to ensure that clean air is achieved and maintained throughout the Perth metropolitan region. The AQMP 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 AQMP are complementary to the Air Toxics NEPM.

Implementation issues arising

Following successful field trials in 2017, the Remote Air Pollution Infrared Detector (RAPID) has been used in both Perth metropolitan and regional Western Australia to investigate a number of complaints of emissions and odours from various industry sources, to supplement departmental investigations. The RAPID is capable of detecting over 80 air pollutants through the use of an infrared detector at a distance of up to 5km. 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 DWER for previous air quality studies in Midland and Kwinana.

Data visualisation techniques and associated data analysis procedures are under continual development to facilitate the interpretation of RAPID data. These infrared measurement techniques have provided insights into emission source activity. The use of combined remote sensing and ambient air monitoring data is a potentially valuable approach to air toxics investigation, enabling identification of emission sources and tracking of emission plumes across large areas.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The NEPM has been effective in highlighting the need to investigate air toxics concentrations and providing monitoring investigation levels against 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 for the Perth metropolitan region was published in June 2018 and is available at <https://www.dwer.wa.gov.au/our-work/programs/460-perth-air-emissions-study-2011-2012>. The inventory includes air toxics and provides 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 2007–2008 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 2005–2010 technical report, which is available on the DWER 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[a]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. David Speirs, Minister for Environment and Water, for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

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

PART 2—ASSESSMENT OF NEPM 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 Peter Gutwein, Treasurer, Minister for the Environment, Parks and Heritage for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM 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* (EMPCA). The process is implemented primarily through EPA Tasmania, 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 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. Air toxics monitoring was discontinued in 2011. No air toxics monitoring was undertaken in Tasmania during the reporting year ending 30 June 2018.

PART 2—ASSESSMENT OF NEPM 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, fourteen stage 2 sites were identified in a Desktop Analysis conducted in accord with the Air Toxics NEPM Desktop Analysis protocol.

Monitoring was conducted at 9 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 (eg 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 woodsmoke emissions;
- motor vehicle emissions, in Hobart; and
- industrial emissions.

The results of the last air toxics monitoring program undertaken by EPA Tasmania during the 2011 calendar year were reported in the 2011-2012 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 2011-2012 annual implementation report.

No air toxics monitoring was conducted in Tasmania during the 2018-2019 period. Consequently, the monitoring requirements for the Air Toxics NEPM must be evaluated as “not demonstrated” for the 2018 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 (MIL) 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 2-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, fourteen 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 the Australian Capital Territory by Mr Mick Gentleman MLA for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

No implementation issues have arisen during the reporting year.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

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

Northern Territory

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for the Northern Territory by the Hon Eva Lawler, Minister for Environment and Natural Resources for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Northern Territory Environment Protection Authority (NT EPA) is responsible for the implementation of the NEPM in the Northern Territory through the provisions of the *Waste Management and Pollution Control Act 1998* and the *National Environment Protection Council (Northern Territory) Act 1994*.

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, well below the investigation levels set by the NEPM.

No further implementation activities were conducted in 2018-19.

A number of companies have indicated that they will be undertaking air toxics monitoring at the NT EPA air quality monitoring stations as part of their environment protection licence requirements.

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 NEPM 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 2018-19, no sites were evaluated or selected and no analyses were performed.

The NT EPA has provided responses to the current NEPM process.

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 Sussan Ley MP, Minister for the Environment for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In 2015, Australia's Environment Ministers established the National Clean Air Agreement, recognising the challenges facing Australia's air quality now and into the future.

The Agreement sets a framework to identify and prioritise actions to address air quality issues that would benefit from national collaboration and that deliver health and environmental outcomes for Australians.

In April 2018, Australian Environment Ministers endorsed a work plan under the Agreement outlining priorities for 2018 to 2020. As part of this work plan, work to review and strengthen the Ambient Air Quality standards for ozone, nitrogen dioxide and sulfur dioxide has been undertaken and has now progressed to its final stages. Public consultation on draft standards took place from May 2019, including the release of an impact statement that examined recent evidence of the health effects of these pollutants. NEPC will carefully consider all public submissions before making a decision on new standards.

The Commonwealth is not required to undertake any direct monitoring as there are currently no nonself governing Commonwealth territories or Commonwealth areas with a population above the 25 000 Ambient Air Quality NEPM protocol threshold.

The *Fuel Quality Standards Act 2000* (the Act) provides a legislative framework for setting and enforcing national fuel quality and fuel quality information standards in Australia. These standards are an important safeguard for consumers and the environment.

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; and
 - ii. facilitate the adoption of better engine technology and emission control technology; and iii. allow the more effective operation of engines; and
- b) ensure that, where appropriate, information about fuel is provided when the fuel is supplied.

In 2018-19, authorised fuel inspectors visited 363 sites and tested 1380 samples for compliance with the Act. The Department of the Environment and Energy identified 20 instances of non-compliance with the Act. The Department engaged with stakeholders following these instances to encourage voluntary compliance with the Act.

In March 2019, the Australian Government made improvements to petrol and diesel fuel quality standards to ensure people have access to better quality fuels and to more closely align with international practice. This is an important step that will provide considerable health and environmental benefits by reducing air pollution and saving billions of dollars in health costs.

All nine sun-setting fuel quality standards (petrol, automotive diesel, autogas (LPG), biodiesel, ethanol E85, ethanol and ethanol E85 information standards, regulations and register of prohibited fuel additives guidelines) have been remade and will commence on 1 October 2019.

Petrol quality will be improved by setting a lower pool average for aromatics from 2022 and lowering the sulfur limits from 2027. The 2027 date does not preclude the earlier availability of low sulfur petrol in the market.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

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

Data collected through the Ambient Air Quality NEPM has previously informed 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. Matt Kean MP, Minister for Energy and Environment, for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The National Environment Protection (Ambient Air Quality) Measure (NEPM) (AAQ 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 Department of Planning, Industry and Environment (DPIE) and the Environment Protection Authority (EPA) work together to reduce impacts of air pollution. DPIE 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.

At 30 June 2019, DPIE operated 86 monitoring stations in the NSW air quality monitoring network, which comprised several smaller networks. Air quality data and information are made publicly available on the DPIE website, updated on an hourly basis. Automated text messages and emails are sent to subscribers when air quality is measured to exceed national air quality standards. A daily forecast is also sent to subscribers and published on the DPIE website for the Sydney region. DPIE 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 2018-19.

Air emissions inventory

The Air Emissions Inventory for the NSW Greater Metropolitan Region (GMR) is a detailed technical snapshot of major sources of air pollution. The inventory estimates emissions for hundreds of substances released to the atmosphere from natural and human-made sources within the GMR and has been updated every five years. The latest available inventory is for the 2008 calendar year.

Detailed inventory data are available in a series of technical reports on the [2008 Calendar Year Air Emissions Inventory](#) webpage. Over 2018-19, work continued on collation of data for the 2013 inventory which is expected to be finalised in 2019.

The community can access air emissions inventory information about local sources of air pollution via the [Air Emissions in my Community](#) web tool. The tool presents aggregated data and charts for different geographic areas within the GMR, down to local council and postcode level. When the 2013 inventory update is complete, 2013 and the 2003 emissions data will be added to the web tool to enable the display of trends over the ten-year period.

Air quality monitoring

At 30 June 2019, the NSW air quality monitoring network totalled 86 stations, consisting of 50 National Association of Testing Authorities (NATA) accredited stations plus 36 indicative rural monitoring sites. The network provides detailed air quality information that is available on the web and updated hourly. Information about the network and current and historic data can be found at www.environment.nsw.gov.au/topics/air/monitoring-air-quality.

The air quality monitoring network designated for reporting compliance with the AAQ NEPM is a subset of the total NSW 86-station network. The AAQ NEPM air quality monitoring network consisted of monitoring stations at 30 sites at 30 June 2019 (16 in Sydney, three in the Illawarra region, three in the Lower Hunter, one in the Central Coast and seven in regional NSW [three in the NSW North-West Slopes, two in the Central Tablelands and two in the South-West Slopes]).

The remaining 56 network stations were not designated for AAQ NEPM reporting. These non-NEPM stations comprised the 36 indicative monitoring sites in the NSW rural air quality network and 20 NATA accredited air quality monitoring stations (two research sites in the Sydney-Blue Mountains region, one monitoring site in the Northern Tablelands region, 14 sites in the industry-funded Upper Hunter network, and three sites in the industry-funded Newcastle local area network). Non-NEPM sites provide information on the impacts of local sources of air pollution and assist DPIE and the EPA to develop actions to reduce air quality impacts.

Fine particle monitoring was extended across the NSW Air Quality Monitoring Network in 2018-19. This monitoring supports air quality and health analysis and compliance assessments against national standards for PM_{2.5} (particles 2.5 micrometres and smaller in diameter). In 2018, new monitoring stations commenced operation in Armidale and Orange in regional NSW, and at Rouse Hill in Sydney North-West in 2019.

Air incident monitoring and modelling capabilities have been established for incidents where air quality impacts may be experienced by the community for a period of several days or longer. This includes two portable monitoring pods, each equipped with seven compliance air quality monitors that meet Australian Standards and the AAQ NEPM requirements, 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.

DPIE is collaborating with research partners and other environment agencies in Australia to investigate low cost air pollution sensors and their deployment within networks for real-time air pollution monitoring and mapping. This research will support future integration of indicative data from sensor networks with high quality data from the NSW air quality monitoring network.

Review of the NSW air quality monitoring plan

A review of the NSW air quality monitoring plan was conducted from 2017 to 2019. The review was undertaken to ensure the current monitoring network is meeting community requirements and the objectives of the AAQ NEPM. It is anticipated an updated plan will be released in late 2019/early 2020.

Blue Mountains and Lithgow Air Watch

[Blue Mountains and Lithgow Air Watch](#) is an air quality monitoring project that will provide a better picture of air quality in the region. The project began in May 2019 and will run for 12 months. The EPA has partnered with a range of Blue Mountains community groups and volunteers, DPIE, Blue Mountains City and Lithgow councils, Doctors for the Environment, Western Sydney University and the Nepean Blue Mountains Local Health District. It comprises:

One temporary air quality monitoring station in Katoomba which measures particles (PM₁₀ and PM_{2.5}), sulfur dioxide, carbon monoxide, ozone, oxides of nitrogen, visibility and meteorology. Data is available in near real-time on the [DPIE website](#).

12 KOALA (Knowing Our Ambient Local Air) air quality sensors - installed in Katoomba, Springwood, Wentworth Falls (Boddington Hill) and Lithgow to measure particles (PM₁₀ and PM_{2.5}) and carbon monoxide. Local businesses, schools and volunteers are hosting and helping to maintain the KOALA sensors throughout the project. The KOALA website provides an indication of current local air quality by showing the latest reading of fine particles (PM_{2.5}). KOALA air quality sensors are reliable, lowcost, solar battery powered sensors, but the readings should not be compared to national standards.

Air emissions and health impacts research

Broken Hill Environmental Lead Study

The Broken Hill Environmental Lead Study continued in 2018-19. This four-year study was commissioned by the BHELP (Broken Hill Environmental Lead Program) and the EPA in 2016 to inform remediation efforts underway as part of a program to address lead contamination and exposures. This collaborative study by BHELP and DPIE aims to monitor airborne and deposited lead and assess contributions of current emissions from mining leases and emissions from non-mining areas. See: www.environment.nsw.gov.au/topics/air/research/current-research/broken-hill-environmental-lead-study.

Sydney Air Quality Study

This multi-year study commenced in 2016 to improve 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.

The initial results from the Sydney Air Quality Study were published in December 2018 in a peer reviewed journal and the first study report is expected to be delivered in the second half of 2019. See: www.environment.nsw.gov.au/topics/air/research/current-research/sydney-air-quality-study.

Enhancing air quality forecasting in NSW

This program was established to progressively expand the scope and enhance the air quality forecasting capabilities in NSW. DPIE 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 DPIE 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. Advancements have been made in 2018-19 in chemical transport modelling to better forecast air pollution impacts from hazard reduction burns, wildfires, dust storms and incidents. See: www.environment.nsw.gov.au/topics/air/research/current-research/air-quality-forecasting.

Industry emissions

In 2018-19, 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.

Load-Based Licensing

The EPA's **Load-Based Licensing** (LBL) scheme requires some environment protection licensees to pay part of their annual licence fees based on the load of certain air and water pollutants their activities release to the environment. By tying the fees payable to pollutant loads, the scheme aims to provide an ongoing economic incentive for licensees to improve their environmental performance beyond the levels required by regulation or licence conditions alone. In 2018-19, the EPA continued to progress a review of the LBL scheme, which aims to improve the scheme's efficiency and effectiveness.

Review of Coal Fired Power Stations Air Emissions and Monitoring

In 2017-18 the EPA completed a detailed compliance review of Coal Fired Power Stations Air Emissions and Monitoring. The review involved detailed analysis of large amounts of monitoring data and operating information. In 2018-19 the EPA continued to work with power station licensees to further standardise and strengthen environmental licence conditions.

Non-road diesel and marine emissions

The EPA 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

Following consultation on best practice measures to reduce non-road diesel exhaust emissions at NSW coal mines, in 2017 the EPA released a draft Pollution Reduction Study (PRS) and draft Special Licence Condition (SLC) for consultation with the coal mining industry. The draft PRS would require operating opencut coal mines to provide information on the emission performance of the existing non-road diesel fleet, measures already adopted, and investigation of any further reasonable and feasible emission reduction measures that could be implemented. The draft SLC would require new non-road diesel equipment commissioned at NSW coal mines to meet the US EPA Tier 4 final emission standard. Over 2018 the EPA continued to review the issues raised by industry in submissions and is considering the appropriate response.

In 2018-19 DPIE continued to administer the NSW Government Resource Efficiency Policy (GREP). The GREP includes requirements to address non-road diesel engine emissions through government procurement and contracts. DPIE undertook a review of the GREP in 2017-18 to analyse wholeofgovernment progress towards implementation, identify challenges faced by agencies, and determine if reforms are required. The updated GREP was published in February 2019.

For non-road diesel engines, government agencies must continue to comply with EU or US EPA standards when purchasing or leasing such equipment. Agencies must also consider air emissions from contractor-supplied equipment in tender processes for construction projects over \$10 million. The tender selection process either incorporates a weighting for air emission standards in conjunction with other environmental considerations, or a statement by contractors on how they will reduce emissions from their equipment. Air emission standards of engines are aligned with the current EU and US EPA levels which are accepted internationally, with a lead time of two years compared to the introduction dates overseas.

Locomotives

In February 2017 the EPA published the Diesel Locomotive - Fuel Efficiency and Emissions Testing report. Together with the 2015 Diesel locomotive emissions reduction technology study, this demonstrated that particle emission reductions conforming to US Tier 0+ emission standards can be achieved through emission upgrade kits or other locomotive upgrade programs. Amendments to the *Protection of the Environment Operations Act 1997* to regulate railway rolling stock operations were prepared in 2018 and came into effect in July 2019. The regulatory amendments mean that operators of rolling stock are required to hold an environment protection licence and are directly accountable for their environmental performance, including management of air emissions.

Vehicle and fuel emissions

Regulation of motorway tunnel ventilation stacks

In February 2018, the NSW government announced a proposal to strengthen the management of air quality associated with motorway tunnel emissions. Under the proposal, operation of all motorway tunnel ventilation stacks in NSW would require an environment protection licence issued by the EPA. The EPA consulted with industry and government agencies on the proposal during 2018-19. The *Protection of the Environment Operations Act 1977* was amended in July 2019 and operators of road tunnel ventilation stacks are now required to hold a licence for air emissions.

Smoky vehicle program

The EPA operates a public smoky vehicle reporting program that targets vehicles emitting excessive air impurities. In 2018-19, the EPA issued 835 advisory letters to vehicle owners reported by members of the community, advising the vehicle owners to have the vehicles inspected and repaired if necessary.

Additionally, 35 defective vehicle notices were issued in 2018-19. 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.

Vapour recovery at service stations

Vapour recovery stage 1 technology (VR1) captures displaced vapours from storage tanks when a tanker delivers fuel to a service station, while vapour recovery stage 2 technology (VR2) captures vapours displaced at the bowser when a motorist refuels.

The EPA's Vapour Recovery Compliance Program was completed in 2017. Regulatory responsibility for vapour recovery at service stations across Sydney, Wollongong, Newcastle and the Central Coast metropolitan areas, as well as the Lower Hunter and Illawarra Regions, has now transitioned from the EPA to local councils.

At 30 June 2019, 99% of petrol service stations required to have VR1 equipment installed and operating were compliant and 98% of petrol service stations required to install VR2 equipment were compliant.

The implementation of vapour recovery is estimated to reduce emissions of volatile organic compounds (VOCs) by approximately 5,750 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 VOC emissions in the Sydney region by an estimated 4,000 tonnes each summer.

National vehicle and fuel standards

Fuel quality and vehicle emission standards for new road vehicles are managed by the Commonwealth Government. NSW previously made submissions to the Commonwealth supporting early introduction of tighter national vehicle emission and fuel standards in March 2017. These proposed standards would more closely harmonise with international best practice for national vehicle emissions and fuel quality standards, and will improve health outcomes.

Wood smoke management

The EPA supports councils across NSW in managing wood smoke through periodic Wood Smoke Reduction Programs and providing community education materials for use by councils. Previous social research undertaken for the EPA identified lack of awareness of wood smoke impacts on health as the key barrier to changing people's wood heater use.

Based on recommendations in the 2016 Upper Hunter Wood Smoke Community Research Project, the EPA developed a new package of woodsmoke education materials to raise awareness about wood smoke impacts on people's health and the environment. During winter 2017 the EPA trialled the education package in two regional centres in the Upper Hunter – Singleton and Muswellbrook, before being rolled out to councils across NSW for the winter of 2018. The materials are now available in English and five community languages – Arabic, Cantonese, Hindi, Mandarin and Vietnamese.

Hunter region air quality management

Throughout spring and summer 2018, the EPA implemented Operation Dust Patrol to ensure that coal mines in the Upper Hunter minimised particle emissions. Dust Patrol used a Dust Risk Forecasting Model to predict times of high dust risk, and the EPA increased surveillance of coal mines at these times. During the operation, the mines produced excessive dust on only one day. This was a significant improvement on earlier years when the mines produced excessive dust on up to 19 days over the same period.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Data in this section are presented for the 2018 calendar year.

The NSW air quality monitoring program is the largest in Australia, with a comprehensive monitoring network operated by DPIE. As noted above, the NEPM network is a sub-set of the NSW air quality monitoring network operated by DPIE. At 31 December 2018, the NSW NEPM reporting network comprised 28 air quality monitoring stations, compared with 22 in 2017. The 28 stations comprised 15 in Sydney, one in the Central Coast, three in the Illawarra, three in the Lower Hunter and six in regional New South Wales. Data were reported for 24 of 28 monitoring stations which met the requirement for greater than 75% data availability for all criteria pollutants. Four stations recorded less than 75% data availability for pollutants over any three-month period.

During 2018, NEPM goals were met for levels of carbon monoxide, nitrogen dioxide and sulfur dioxide, which all remained well below NEPM standards.

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 2018, NEPM goals were not met for ozone and particles as PM₁₀ (10 micrometres and smaller in diameter) and as PM_{2.5} (2.5 micrometres and smaller in diameter). Exceedances are summarised below.

Ozone

During 2018, only Sydney and the Lower Hunter regions recorded ozone levels above the national standards. The Central Coast and Illawarra regions were not impacted.

Ozone forms most actively during the warm months, between November and March. Factors affecting the higher levels of ozone formation in the GMR include intense heatwaves and the daily build-up across the region of precursor emissions of oxides of nitrogen (NOX) and volatile organic compounds (VOC). Meeting the NEPM standards for ozone remains a challenge for Sydney in summer, due to increases in average temperatures, economic activity, motor vehicle use and urban expansion.

Twenty-three stations in the NEPM network monitored ozone in 2018, compared with 16 in 2017. Twenty-one stations met 75% data availability. Detailed compliance information is provided below.

- *Ozone one-hour standard*

The NEPM one-hour standard was exceeded on five calendar days in 2018 (19, 22 January and 27, 28 and 31 December 2018).

Ten of 21 stations exceeded the one-hour standard: seven stations on one allowable exceedance day and three stations with two to three exceedance days.

- *Ozone one-hour goal*

The NEPM goal for the one-hour ozone standard allows one exceedance day per year.

Eighteen of 21 stations met the NEPM one-hour ozone goal: 11 stations with no exceedance days and seven stations with one allowable exceedance day.

Three of 21 stations did not comply with the NEPM one-hour ozone goal. The three noncompliant stations, with two to three exceedance days, were in the Sydney region.

- *Ozone four-hour standard*

The NEPM four-hour standard was exceeded on seven calendar days in 2018 (12, 19, 22 January, 2 February and 27, 28 and 31 December 2018).

Twelve of 21 stations exceeded the four-hour standard: two stations on one allowable exceedance day and ten stations with two to four exceedance days.

- *Ozone four-hour goal*

The NEPM goal for the four-hour ozone standard allows one exceedance day per year.

Eleven of 21 stations met the NEPM four-hour ozone goal: nine stations with no exceedance days and two stations with one allowable exceedance day.

Ten of 21 stations did not comply with the NEPM four-hour ozone goal. The ten non-compliant stations, with two to four exceedance days, were in the Sydney region.

Particles

Major influences on elevated PM_{10} and $PM_{2.5}$ levels in NSW were widespread dust storms, hazard reduction burning throughout the Sydney GMR in May and July and agricultural activities during March and May in the South-West Slopes-Riverina district.

In summary, particle levels increased across the State, due to dust from the widespread, intense drought and smoke from hazard reduction burning and bushfires. Local sources of air pollution, including agricultural activity, industrial activity and domestic wood heaters, affected air quality in some locations.

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

Detailed compliance information is provided below.

Particles as PM_{10}

Twenty-eight stations in the NSW NEPM air quality monitoring network monitored PM_{10} levels in 2018, compared with 19 in 2017. Twenty-six stations met 75% data availability.

- *PM_{10} 24-hour standard*

The PM_{10} 24-hour standard was exceeded on 59 calendar days in 2018.

Thirty-eight days were exceptional events, due to widespread dust storms (23 days), smoke from and hazard reduction burning (14 days) and bushfires (1 day).

Twenty-one days were non-exceptional events, due to particles from local sources. Sixteen days were most likely affected by agricultural activities in the NSW South-West Slopes-Riverina region.

All 26 NEPM-compliant stations (for data availability) exceeded the PM_{10} 24-hour standard on days that were exceptional events. Three of 26 stations exceeded the PM_{10} 24-hour standard, due to particles from local sources: Wagga Wagga North and Albury in the Riverina region and Kembla Grange in the Illawarra region.

- *PM_{10} 24-hour goal*

Twenty-three of 26 stations met the 24-hour PM_{10} goal, with exceedance days only due to exceptional events. Three stations did not comply with the 24-hour PM_{10} goal, due to exceedance days related to local particle sources (non-exceptional events), as noted above.

- *PM_{10} annual goal*

Twenty-five of 26 stations met the annual PM_{10} goal, recording annual average concentration below $25.0 \mu\text{g}/\text{m}^3$. Wagga Wagga North did not comply with the goal, recording an annual average of $27.4 \mu\text{g}/\text{m}^3$.

Particles as $PM_{2.5}$

Twenty-eight stations in the NSW NEPM air quality monitoring network monitored $PM_{2.5}$ levels in 2018, compared with 22 in 2017. Twenty-six stations met 75% data availability.

- *$PM_{2.5}$ 24-hour standard*

The $PM_{2.5}$ 24-hour standard was exceeded on 26 calendar days in 2018.

Twenty-one days were exceptional events, due to smoke from hazard reduction burning (20 days) and one day due to a widespread dust storm.

Five days were non-exceptional events, due to particles from local sources. Three days were affected by wood smoke and one day by wood smoke and emissions from local industry. Two days were affected by agricultural activities (one of these dates, 24 April, was affected by hazard reduction burning near Sydney North-West and counted in the number of exceptional event days).

Twenty-one of 27 NEPM-compliant stations (for data availability) recorded exceedances of the $PM_{2.5}$ 24-hour standard.

- *$PM_{2.5}$ 24-hour goal*

Twenty-four of 27 stations met the NEPM 24-hour $PM_{2.5}$ goal: six stations with no exceedances and 18 stations with exceedance days only due to exceptional events (hazard reduction burning on one to eight days).

Three stations did not meet the goal, due to exceedance days affected by woodsmoke (four days at Gunnedah in the NSW North-west Slopes), agricultural activities (two days at Albury in the NSW South-West Slopes), and local industry emissions (one day at Chullora in Sydney East).

- *PM_{2.5} annual goal*

Seventeen of 27 stations met the annual PM_{2.5} goal, recording annual average concentrations below 8.049 µg/m³. Ten stations did not comply with the goal, recording annual averages ranging from 8.1-10.1 µg/m³ in Sydney, 8.7 µg/m³ in the Lower Hunter region and 8.3-9.0 µg/m³ in other regional areas.

Monitoring data

Data from NEPM monitoring stations are presented below, showing compliance with the NEPM standards and goals set by Schedule 2 of the NEPM.

An air quality monitoring station complies with NEPM goals for specific criteria pollutants, for averaging times shorter than one year, if:

- at least 75% of data are captured in each quarter of the year, and
- the NEPM standards for gases are exceeded on only one day per calendar year, or
- the NEPM standards for particles as PM₁₀ and PM_{2.5} are exceeded only on days classified as exceptional events, where elevated levels relate directly to continental windblown dust, authorised hazard reduction burning or bushfires.

Hourly updated data from the total NSW air quality monitoring network are reported at <http://www.environment.nsw.gov.au/AQMS/aqi.htm>.

Current and historical data is searchable and downloadable from <http://www.environment.nsw.gov.au/AQMS/search.htm>.

Information about the NSW Air Quality Monitoring Plan is located at <https://www.environment.nsw.gov.au/topics/air/monitoring-air-quality/review/nsw-air-quality-monitoring-plan>.

CO

Carbon monoxide

(NEPM standard 8 hours = 9.0ppm)

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

* ND (not determined) – the Rozelle station did not meet 75% data availability criteria for carbon monoxide due to recommissioning of the site in 2018

During 2018, compliance with the AAQ NEPM for carbon monoxide was demonstrated at 10 of 11 sites in the Sydney, Illawarra, Central Coast and Lower Hunter regions.



Nitrogen dioxide

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

Station	1 hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Sydney				
Bargo	0	Met	0.006	Met
Bringelly	0	Met	0.006	Met
Camden	0	Met	0.005	Met
Campbelltown West	0	Met	0.011	Met
Chullora	0	Met	0.012	Met
Earlwood	0	Met	0.010	Met
Liverpool	0	Met	0.012	Met
Macquarie Park	0	Met	0.006	Met
Oakdale	0	Met	0.002	Met
Parramatta North	0	Met	0.011	Met
Prospect	0	Met	0.009	Met
Randwick	0	Met	0.007	Met
Richmond	0	Met	0.005	Met
Rozelle*		ND		ND
St Marys	0	Met	0.005	Met
Central Coast				
Wyong	0	Met	0.004	Met
Illawarra				
Albion Park South	0	Met	0.004	Met
Kembla Grange	0		0.005	Met
Wollongong	0	Met	0.007	Met
Lower Hunter				
Beresfield	0	Met	0.009	Met
Newcastle	0	Met	0.007	Met
Wallsend	0	Met	0.007	Met
Regional New South Wales				
Gunnedah**		ND		ND

* ND (not determined) – the Rozelle station non-compliant with > 75% data availability criteria for nitrogen dioxide due to recommissioning of the site in 2018

** ND (not determined) – Gunnedah station non-compliant with > 75% data availability criteria for ozone during quarter 1 due to late commissioning.

During 2018, compliance with the AAQ NEPM goals for nitrogen dioxide was demonstrated at 21 of 23 sites in the Sydney, Illawarra, Central Coast and Lower Hunter regions.



Ozone

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

Station	1 hour		4 hours	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Sydney				
Bargo	1	Met	2	Not Met
Bringelly	2	Not Met	4	Not Met
Camden	2	Not Met	4	Not Met
Campbelltown West	3	Not Met	4	Not Met
Chullora	0	Met	1	Met
Earlwood Iweeo	0	Met	0	Met
Liverpool	1	Met	3	Not Met
Macquarie Park	0	Met	0	Met
Oakdale	0	Met	2	Not Met
Parramatta North	1	Met	2	Not Met
Prospect	1	Met	2	Not Met
Randwick	0	Met	0	Met
Richmond	1	Met	2	Not Met
Rozelle*				ND
St Marys	1	Met	2	Not Met
Central Coast				
Wyong	0	Met	0	Met
Illawarra				
Albion Park South	0	Met	0	Met
Kembla Grange	0	Met	0	Met
Wollongong	0	Met	0	Met
Lower Hunter				
Beresfield	1	Met	1	Met
Newcastle	0	Met	0	Met
Wallsend	0	Met	0	Met
Regional New South Wales				
Gunnedah**				ND

* ND (not determined) – the Rozelle station non-compliant with > 75% data availability criteria for ozone due to recommissioning of the site in 2018

** ND (not determined) – Gunnedah station non-compliant with > 75% data availability criteria for ozone during quarter 1 due to late commissioning.

During 2018, compliance with the AAQ NEPM goals for ozone was demonstrated at 18 of 23 sites for the one-hour goal and 11 of 23 sites for the four-hour goal.



Sulfur dioxide

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

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						
Bargo	0	Met	0	Met	< 0.001	Met
Bringelly	0	Met	0	Met	< 0.001	Met
Campbelltown West	0	Met	0	Met	0.001	Met
Chullora	0	Met	0	Met	0.001	Met
Liverpool	0	Met	0	Met	0.001	Met
Macquarie Park	0	Met	0	Met	0.001	Met
Parramatta North	0	Met	0	Met	0.001	Met
Prospect*		ND		ND		ND
Randwick	0	Met	0	Met	0.001	Met
Richmond	0	Met	0	Met	< 0.001	Met
Rozelle**		ND		ND		ND
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						
Beresfield	0	Met	0	Met	0.002	Met
Newcastle	0	Met	0	Met	0.001	Met
Wallsend	0	Met	0	Met	0.001	Met

* ND (not determined) – Prospect station non-compliant with > 75% data availability criteria for sulfur dioxide in quarter 2, 2018.

** ND (not determined) – the Rozelle station non-compliant with 75% data availability criteria for sulfur dioxide due to recommissioning of the site in 2018

During 2018, compliance with the AAQ NEPM goals for sulfur dioxide was demonstrated at 15 of 17 sites in the Sydney, Illawarra, Central Coast and Lower Hunter regions.

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

Station	1 day			1 year	
	Non-exceptional exceedances	Exceptional exceedances	NEPM goal compliance	Annual average (25 µg/m ³)	NEPM goal compliance
Sydney					
Bargo	0	4	Met	16.9	Met
Bringelly	0	8	Met	21.3	Met
Camden	0	6	Met	17.5	Met
Campbelltown West	0	3	Met	17.9	Met
Chullora	0	7	Met	21.9	Met
Earlwood	0	5	Met	19.8	Met
Liverpool	0	13	Met	24.2	Met
Macquarie Park	0	4	Met	17.2	Met
Oakdale	0	5	Met	15.4	Met
Parramatta North	0	8	Met	21.6	Met
Prospect	0	8	Met	21.9	Met
Randwick	0	5	Met	21.2	Met
Richmond	0	8	Met	18.7	Met
Rozelle*			ND		ND
St Marys**			ND		ND
Central Coast					
Wyong	0	6	Met	18.0	Met
Illawarra					
Albion Park South	0	2	Met	17.8	Met
Kembla Grange	1	9	Not Met	22.7	Met
Wollongong	0	5	Met	19.8	Met
Lower Hunter					
Beresfield	0	8	Met	21.6	Met
Newcastle	0	8	Met	24.5	Met
Wallsend	0	5	Met	19.4	Met

Station	1 day			1 year	
	Non-exceptional exceedances	Exceptional exceedances	NEPM goal compliance	Annual average (25 µg/m ³)	NEPM goal compliance
Regional New South Wales					
Albury	4	3	Not Met	19.8	Met
Bathurst	0	8	Met	18.8	Met
Gunnedah	0	10	Met	18.9	Met
Narrabri	0	10	Met	14.3	Met
Tamworth	0	9	Met	20.1	Met
Wagga Wagga North	27	7	Not Met	27.4	Not Met

* ND (not determined) – the Rozelle station non-compliant with 75% data availability criteria for PM₁₀ due to recommissioning of the site in 2018.

** ND (not determined) – the St Marys station non-compliant with > 75% data availability criteria for PM₁₀ in 2018.

During 2018, compliance with the AAQ NEPM goals for particles as PM₁₀ was demonstrated at 23 of 28 sites for the 24-hour goal and 25 of 28 sites for the annual goal.

PM_{2.5}

Particles as PM_{2.5}

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

Station	1 day			1 year	
	Non-exceptional exceedances	Exceptional exceedances	NEPM goal compliance	Annual average (8 µg/m ³)	NEPM goal compliance
Sydney					
Bargo	0	2	Met	6.8	Met
Bringelly	0	4	Met	8.0**	Met
Camden	0	2	Met	7.2	Met
Campbelltown West	0	2	Met	8.4	Not Met
Chullora	1	2	Not Met	8.6	Not Met
Earlwood	0	1	Met	7.8	Met
Liverpool	0	8	Met	10.1	Not Met
Macquarie Park	0	3	Met	7.0	Met
Oakdale	0	2	Met	6.9	Met
Parramatta North	0	4	Met	9.2	Not Met
Prospect	0	4	Met	8.5	Not Met
Randwick	0	1	Met	7.6	Met
Richmond	0	4	Met	8.1	Not Met
Rozelle*			ND		ND
St Marys	0	3	Met	7.8	Met
Central Coast					
Wyong	0	0	Met	6.8	Met
Illawarra					
Albion Park South	0	1	Met	6.8	Met
Kembla Grange	0	0	Met	7.0	Met
Wollongong	0	3	Met	7.3	Met
Lower Hunter					
Beresfield	0	0	Met	8.7	Not Met
Newcastle	0	0	Met	7.8	Met
Wallsend	0	0	Met	7.5	Met

Station	1 day			1 year	
	Non-exceptional exceedances	Exceptional exceedances	NEPM goal compliance	Annual average (8 $\mu\text{g}/\text{m}^3$)	NEPM goal compliance
Regional New South Wales					
Albury	2	0	Not Met	7.3	Met
Bathurst	0	2	Met	7.0	Met
Gunnedah	4	1	Not Met	9.0	Not Met
Narrabri	0	1	Met	4.9	Met
Tamworth	0	0	Met	8.3	Not Met
Wagga Wagga North	0	0	Met	8.4	Not Met

* ND (not determined) – the Rozelle station non-compliant with 75% data availability criteria for $\text{PM}_{2.5}$ due to recommissioning of the site in 2018.

** Annual exceedances of the standard must be greater than $8.0 \mu\text{g}/\text{m}^3$

During 2018, compliance with the NEPM goals for particles as $\text{PM}_{2.5}$ was demonstrated at 24 of 28 sites for the 24-hour goal, and 17 of 28 sites for the annual goal.

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 2019.

PART 1 – IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- Monitoring was performed in accordance with a modified state monitoring plan, National Environment Protection (Ambient Air Quality) Measure (NEPM) technical papers and Environment Protection Authority Victoria's National Association of Testing Authorities' accreditation.
- For particulate matter equal or less than $10\mu\text{m}$ (PM_{10}), particulate matter equal or less than $2.5\mu\text{m}$ ($\text{PM}_{2.5}$) and nitrogen dioxide (NO_2), data capture was high, with all stations above the data capture target of 75%.
- For carbon monoxide (CO) data capture was below the target of 75% at Footscray in quarter 1 (Q1), this was due to instrumentation issues.
- For ozone (O_3) data capture was below the target of 75% at Footscray and Traralgon in quarters 2 (Q2), 3 (Q3) and 4 (Q4), this was due to these instruments only being operated during the summer periods where peak ozone formation occurs. Annual data capture at these stations were also below the target of 75%.
- For sulfur dioxide (SO_2) data capture was below the target of 75% at Altona North in quarters 1 (Q1) and quarter 4 (Q4) and Traralgon in quarter 4 (Q4), this was due to instrumentation issues. Annual data capture at Altona North was above the target of 75%.
- There were no other significant implementation issues.

PART 2 – ASSESSMENT OF NEPM EFFECTIVENESS

- In general, Victoria's air quality in 2018 was categorised as good due to levels of air pollution being below the air quality standards on most days. However, there were exceedances of air quality standards for $\text{PM}_{2.5}$, PM_{10} and O_3 . Air quality trends over the last few years have remained consistent.
- Urban sources, such as domestic wood heating, continue to be a significant contributor to the number of exceedances of the $\text{PM}_{2.5}$ standard. These generally occurred on cold, still nights, which are usually associated with increased usage of heating and meteorological conditions that limit the dispersion of smoke.
- Several days of $\text{PM}_{2.5}$ exceedances were also associated with land burns. These burns are carried out to reduce fuel loads and the risk of major bushfires in summer as well as for the protection of water catchment areas.
- Wind-blown dust also contributed to exceedances of the PM_{10} standard on several days during summer and early autumn. Some of these exceedances were also potentially associated with planned hazard reduction burns in May.
- Compliance with the O_3 goals were not demonstrated at Footscray and Traralgon where there was one day where the 4-hour O_3 standard was not met; these exceedances were likely to be associated with urban pollution sources.
- The results from issue-specific monitoring stations in Brooklyn and the Latrobe Valley are displayed on EPA's website: <https://www.epa.vic.gov.au/EPAAirWatch>

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% of data are captured in each quarter.

The data are presented in greater detail in <https://www.epa.vic.gov.au/about-epa/publications/1749>



Carbon monoxide

(NEPM standard 8 hours = 9.0 ppm)

Station	Number of exceedances	NEPM goal compliance
Alphington	0	Met
Footscray	0	Not Met*
Geelong South	0	Met

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



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	0.010	Met
Footscray	0	Met	0.010	Met
Geelong South	0	Met	0.006	Met
Traralgon	0	Met	0.006	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
Dandenong	0	Met	1	Not Met
Footscray	ND	Not Met*	1	Not Met
Geelong South	0	Met	0	Met
Melton	0	Met	0	Met
Mooroolbark	0	Met	0	Met
Point Cook	0	Met	0	Met
Traralgon	ND	Not Met*	ND	Not Met*

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

SO₂

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	Not Met*	0	Not Met*	0.0015	Met
Geelong South	0	Met	0	Met	0.0004	Met
Traralgon	0	Met	0	Met	0.0007	Met

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

Pb

Lead

(NEPM standard 1 year = 0.50 µg/m³)

Station	Annual average (µg/m ³)	NEPM goal compliance
N/A	N/A	N/A

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.

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

Station	Number of exceedances	NEPM goal compliance
Alphington	3(2)	Not Met
Dandenong	3(1)	Not Met
Footscray	1	Not Met
Geelong South	6(1)	Not Met
Mooroolbark	1(1)	Not Met
Traralgon	1(1)	Not Met

() One or more exceedance/s attributed to jurisdiction-authorised hazard reduction burning and is considered an exceptional event for the purpose of assessing compliance with the goal

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 (days)	Annual average (µg/m ³)
Alphington (Partisol)	1(1)	7.6
Alphington (BAM)	8(3)	7.9
Footscray (Partisol)	1(1)	7.1
Footscray (BAM)	5(3)	7.7
Geelong (BAM)	1	6.5
Traralgon (BAM)	2	8.1

() number of exceedances attributed to jurisdiction-authorised hazard reduction burning and is considered an exceptional event for the purpose of assessing compliance with the goal

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Queensland by Leeanne Enoch MP, Minister for Environment and the Great Barrier Reef, Minister for Science, and Minister for the Arts for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The Ambient Air Quality NEPM (AAQ NEPM) specifies the reporting year as the year ending on 31 December and the results reported in this report are for the year ending on 31 December 2018 in accordance with the NEPM.
- In Queensland, the AAQ 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 2018, monitoring was conducted in five of the ten regions identified in the Monitoring Plan: South East Queensland, Gladstone, Mackay, Townsville and Mount Isa. Twelve of the nineteen sites nominated in the monitoring plan, and two additional reporting sites, were operational. Monitoring at four of the seven remaining sites concluded prior to 2018 due to completion of campaign monitoring or site closure following termination of the monitoring site lease by the property owner.
- A new monitoring site at Southport on the Gold Coast in South East Queensland was established in February 2018. Pollutants monitored at this site include nitrogen dioxide, ozone, PM₁₀ and PM_{2.5}.
- Collection of PM_{2.5} data using Tapered Element Oscillating Microbalance (TEOM) instrumentation with Filter Dynamics Measurement System (FDMS) continued at three sites in South East Queensland (Rocklea, Springwood and Southport) and one site in Gladstone (South Gladstone) during 2018.
- Collection of PM_{2.5} data using Teledyne Advanced Pollution Instrumentation (TAPI) T640X optical particle spectrometer continued at Townsville North Ward site during 2018.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

- The results of Queensland's ambient air quality monitoring in 2018 indicate that the goal of the AAQ 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 and PM₁₀ in West Mackay and Mount Isa.
- One exceedance of the AAQ NEPM ozone one-hour and four-hour standards occurred at the Flinders View monitoring site in South East Queensland due to the presence of added ozone precursor pollutant emissions from vegetation fires during meteorological conditions conducive to ozone formation. However, the AAQ NEPM goals were met as one exceedance day per year is allowed.
- 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 AAQ NEPM sulfur dioxide one-hour standard continues to be impacted by the operation of the copper smelter that was constructed prior to the development of the AAQ NEPM.
- The environmental authority for the site allows the operation of the copper smelter to continue until 2022. While still progressively reducing emissions to air at the site, the environmental authority allows for one-hour average sulfur dioxide concentrations in excess of the AAQ NEPM standard. As a result, exceedances of the AAQ NEPM standard for one-hour average sulfur dioxide concentrations occurred at the Menzies and The Gap monitoring sites in Mount Isa due to industrial emissions in 2018.
- There were a total of 47 exceedances of the AAQ NEPM PM₁₀ 24-hour standard across Queensland monitoring sites during 2018. All but three of these exceedances were directly attributed to an exceptional event (emissions from a bushfire or jurisdiction authorised hazard reduction burning, or continental scale windblown dust) and were excluded from reporting of compliance with the 24-hour AAQ NEPM goal as required by clause 18 of the NEPM.

- Two exceedances of the PM₁₀ 24-hour standard at the West Mackay monitoring site and one PM₁₀ 24-hour exceedance at The Gap monitoring site in Mount Isa could not be conclusively demonstrated to have been caused by an exceptional event as defined in the AAQ NEPM, although available information suggests that windblown dust or smoke from a vegetation fire was the likely PM₁₀ source.
- There were a total of 17 exceedances of the AAQ NEPM PM_{2.5} 24-hour standard across Queensland during 2018. All the PM_{2.5} exceedances were directly attributed to an exceptional event (emissions from a bushfire or jurisdiction authorised hazard reduction burning) and were excluded from reporting of compliance with the 24-hour AAQ NEPM goal as required by clause 18 of the NEPM .

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 and PM_{2.5}), is the result of an exceptional event (PM₁₀ and PM_{2.5}) and at least 75% of data is captured in each quarter.

The data are presented in greater detail in the Queensland 2018 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 = 9.0ppm)

Station	Number of exceedances	NEPM goal compliance
South East Queensland		
Woolloongabba	0	Met

NO₂

Nitrogen dioxide

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

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
Southport	0	ND*	0.005	ND*
Flinders View	0	Met	0.008	Met
Gladstone				
South Gladstone	0	Met	0.005	Met
Townsville				
North Ward	0	ND†	0.002	ND†

ND = Not demonstrated.

* Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to monitoring not commencing until 23 February 2018.

† Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to extended monitoring equipment outages.



Ozone

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

Station	1 hour		4 hour	
	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	ND†	0	ND†
Southport	0	ND‡	0	ND‡
Flinders View	1	Met*	1	Met*

ND = Not demonstrated.

† Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to extended monitoring equipment outages.

‡ Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to monitoring not commencing until 23 February 2018.

* AAQ NEPM goal states standards are not to be exceeded on more than one day per year.



Sulfur dioxide

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

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						
North Ward	0	Met	0	Met	0.001	Met
Stuart	0	ND*	0	ND*	0.000	ND*
Mount Isa						
Menzies	26	Not Met	0	Met	0.006	Met
The Gap	13	Not Met	0	Met	0.004	Met

ND = Not demonstrated.

* Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to the closure of the monitoring station on 14 November 2018 following the sale of the property on which the station was located.

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	0.10	Met
Mount Isa		
The Gap	0.10	Met

PM₁₀**Particles as PM₁₀**(NEPM standard 1 day = $50\mu\text{g}/\text{m}^3$ (excluding exceptional events), 1 year = $25\mu\text{g}/\text{m}^3$)

Station	1 day		1 year	
	Number of exceedances (days)§	NEPM goal compliance	Annual average ($\mu\text{g}/\text{m}^3$)	NEPM goal compliance
South East Queensland				
Mountain Creek+	5 (5)	Met	19.6	Met
Rocklea†	5 (5)	Met	15.0	Met
Springwood†	2 (2)	Met	13.1	Met
Southport†	4 (4)	ND*	15.8	ND*
Flinders View+	6 (6)	Met	20.0	Met
Gladstone				
South Gladstone†	5 (5)	Met	13.9	Met
Mackay				
West Mackay+	5 (3)	Not Met	22.4	Met
Townsville				
North Ward‡	0	Met	15.0	Met
Mount Isa				
The Gap+	15 (14)	Not Met	23.9	Met

ND = Not demonstrated.

§ Bracketed value () indicates the number of exceedances determined to be directly associated with an exceptional event (e.g. bushfire smoke or dust storm) and, as such, excluded from assessment of compliance with the 24-hour standard.

+ Monitoring by TEOM Model 1405 instrumentation.

† Monitoring by TEOM Model 1405DF instrumentation fitted with FDMS.

‡ Monitoring by TAPI T640X optical particle spectrometer.

* Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to monitoring not commencing until 23 February 2018.

PM_{2.5} Particles as PM_{2.5}

(NEPM standard 1 day = 25µg/m³ (excluding exceptional events), 1 year = 8µg/m³)

Station	1 day		1 year	
	Number of exceedances (days)§	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
South East Queensland				
Rocklea+	2 (2)	Met	6.4	Met
Springwood+	0	Met	5.9	Met
Southport+	6 (6)	ND*	6.5	ND*
Gladstone				
South Gladstone+	7 (7)	Met	5.5	Met
Townsville				
North Ward‡	2 (2)	Met	5.6	Met

ND = Not demonstrated.

§ Bracketed value () indicates the number of exceedances determined to be directly associated with an exceptional event (bushfire smoke) and, as such, excluded from assessment of compliance with the 24-hour standard.

+ monitoring by TEOM Model 1405DF instrumentation fitted with FDMS.

‡ monitoring by TAPI T640X optical particle spectrometer.

* Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to monitoring not commencing until 23 February 2018.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Western Australia by the Hon. Stephen Dawson, MLC Minister for Environment; Disability Services; Electoral Affairs for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In Western Australia, the National Environment Protection (Ambient Air Quality) Measure (NEPM) is implemented by the Department of Water and Environmental Regulation (DWER) 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; and
- 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 seven criteria pollutants.

In the first category, DWER 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, DWER has:

- continued to implement the Perth Air Quality Management Plan (AQMP). The AQMP is a whole of government plan aimed at improving and maintaining Perth's air quality. Implementation of a number of priority actions within the AQMP has commenced in addition to a number of ongoing programs.
- 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 through DWER's webpage (www.der.wa.gov.au/your-environment/air); and
- Regulated emissions from industrial premises through works approvals and licences to control emissions of the criteria pollutants.

PART 2 — ASSESSMENT OF NEPM 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 AQMP, 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 met the NEPM goals for all pollutants in calendar year 2018 except for daily average PM₁₀ at Albany, Caversham and Geraldton and the daily average PM_{2.5} NEPM goal at Bunbury, Busselton and Kalgoorlie. The annual goal for PM_{2.5} was not met at South Lake and Bunbury.

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 and PM_{2.5}, which may not be exceeded unless due to an exceptional event) and at least 75% 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 DWER website, along with the West Australian Monitoring Plan at <https://www.der.wa.gov.au/your-environment/air/203-air-quality-publications>.

CO Carbon monoxide

(NEPM standard 8 hours = 9.0ppm)

Station	Number of exceedances	NEPM goal compliance
Perth		
North East Metro	0	Met
North Metro	0	Met
South East Metro	0	Met
Goldfields		
Kalgoorlie	0	ND

ND = Not demonstrated.

NO₂ Nitrogen dioxide

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

Station	1 hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Perth				
North Metro	0	Met	0.005	Met
North East Metro	0	Met	0.005	Met
South Coast	0	ND	0.003	ND
Outer East Rural	0	Met	0.002	Met
South East Metro	0	Met	0.007	Met
Inner West Coast	0	Met	0.004	Met

ND = Not demonstrated.



Ozone

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

Station	1 hour		4 hours	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Perth				
North East Metro	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	0	Met	0	Met



Sulfur dioxide

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

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	0.002	Met
South Coast	0	Met	0	Met	0.001	Met
South East Metro	0	Met	0	Met	0.002	Met
Goldfields						
Kalgoorlie	0	Met	0	Met	0.001	Met



Lead

(NEPM standard 1 year = 0.50μg/m³)

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, 1 year = 25 µg/m³)

Station	1 day		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Perth				
North East Metro ¹	2	Not Met	16.3	Met
North Metro ¹	1	Met	15.1	Met
South East Metro ¹	1	Met	16.3	Met
Southwest				
Albany ¹	2	Not Met	14.6	Met
Bunbury ¹	1	Met	16.1	Met
Collie ¹	10	Met	19.3	Met
Midwest				
Geraldton ¹	3	Not Met	20.1	Met
Goldfields				
Kalgoorlie ²	1	Met	12.8	Met

- 1 Tapered Element Oscillating Microbalance (TEOM) operating continuously (unadjusted for temperature) and includes the manufacturers recommended equivalency factor of 1.03x + 3.00.
- 2 1405 TEOM operating continuously (unadjusted for temperature) and includes no equivalency factor.

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 (µg/m ³)	NEPM goal compliance
Perth				
North East Metro ¹	2	Met	8.0	Met
North Metro ¹	1	Met	7.7	Met
South East Metro ¹	5	Met	8.4	Not Met
Southwest				
Bunbury ¹	5	Not Met	8.4	Not Met
Busselton ¹	7	Not Met	7.9	Met
Goldfields				
Kalgoorlie ²	1	Not Met	5.1	Met

- 1 1400AB Tapered Element Oscillating Microbalance (TEOM) operating continuously (unadjusted for temperature) and includes the manufacturers recommended equivalency factor of 1.03x + 3.00.
 - 2 1405 TEOM operating continuously (unadjusted for temperature) and includes no equivalency factor.
- ND = Not demonstrated.

Relationship between location descriptors and monitoring station location/names

Location descriptor	Station Location
North East Metro	Caversham
North Metro	Duncraig
South East Metro	South Lake
Outer East Rural	Rolling Green

Location descriptor	Station Location
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. David Speirs, Minister for Environment and Water, for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In South Australia the Environment Protection Authority (SA EPA) is responsible for implementing the National Environment Protection (Ambient Air Quality) Measure (AAQ NEPM), taking into account the Ambient Air Quality Monitoring Plan for South Australia, developed under the AAQ NEPM, and Peer Review Committee Technical Papers.
- South Australia has made access to air quality monitoring data available on a variety of publicly available platforms, and will continue to work on improving data visualisation.
- Apart from conventional NEPM monitoring, the SA EPA has also commenced targeted/community-based air quality monitoring to evaluate local air quality concerns. For example, the EPA's mobile monitoring station at Port Augusta has been operational since March 2017 to evaluate local dust concerns. This station is equipped to continuously monitor total suspended particulates (TSP), particles (PM₁₀ and PM_{2.5}) and meteorological conditions.
- Compliance with the standards and goals could not be demonstrated for some pollutants at some sites, due to data availability rates less than the 75% criteria for one or more quarters. This was due to a number of factors including technical issues with instrumentation and equipment breakdowns. The SA EPA is reviewing the capability and suitability of its equipment with an aim to increase the data capture rate.
 - Nitrogen dioxide—the data capture target of 75% was not achieved at Elizabeth Downs, Kensington Gardens or Netley. High data capture rates were achieved at the other three stations.
 - Ozone—data capture rates were generally high, with the target of 75% data availability each quarter being met at all sites except Elizabeth Downs.
 - Sulfur dioxide—high data capture rates were achieved at Northfield, however, insufficient data was obtained at North Haven and Port Pirie Oliver Street to meet the target.
 - Lead—high data capture rates were achieved at both sites in Port Pirie.
 - Particles (PM₁₀)—data capture rates above 75% were achieved at most sites in the Adelaide metropolitan area, with the exception of Elizabeth Downs and North Haven. Both sites in the Spencer region (Port Pirie Oliver Street and Whyalla Schulz Reserve) had more than 75% data capture in all quarters.
 - Particles (PM_{2.5})—data availability at Elizabeth Downs was less than the target of 75%. Sufficient data was obtained at Netley and North Haven to meet the 75% target.
- There were no other significant implementation issues.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Data for South Australia shows that air quality was generally good in 2018.

In the Adelaide metropolitan region:

- Monitoring of carbon monoxide at Elizabeth Downs ceased in 2017 due to consistently low concentrations being measured.
- There were multiple exceedances of the 1-day PM₁₀ standard which were likely due to dust storms and prescribed burns.
- The 1-year PM₁₀ standard was marginally exceeded at Netley, possibly due to 2018 being a dry year.

- In 2018, the EPA completed the replacement of tapered element oscillating microbalances (TEOMs) with Beta Attenuation Monitors (BAMs) for monitoring PM₁₀. The SA EPA is continuing to evaluate this change in technology.

In the Spencer region:

- Exceedances of the 1-day PM₁₀ standard occurred at both Port Pirie and Whyalla, due to local sources and dust storms.
- At Port Pirie there were multiple exceedances of the 1-hour SO₂ standard, and a single exceedance of the 1-day SO₂ standard that were the result of industrial emissions.
- Annual average lead concentrations exceeded the standard at Port Pirie Oliver Street.
- The SA EPA is working to ensure required ongoing environmental improvements associated with the Nyrstar Port Pirie's transformation are effectively implemented, and the new smelter and acid plant is expected to significantly reduce SO₂ 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 and PM_{2.5} which does not allow for any exceedances except where they can be attributed to exceptional events) and at least 75% of data are captured in each quarter.

The data presented in greater detail are available from quarterly air quality monitoring reports published on the SA EPA website here: https://www.epa.sa.gov.au/data_and_publications/air_quality_monitoring/reports_and_summaries

The monitoring plan for South Australia is available from https://www.epa.sa.gov.au/files/12061_airepnm.pdf.

The Environment Protection Authority also publishes monitoring data on the EPA and Data SA websites:

- Hourly updates
https://www.epa.sa.gov.au/data_and_publications/air_quality_monitoring
- Air quality summary reports https://www.epa.sa.gov.au/data_and_publications/air_quality_monitoring/reports_and_summaries
- Validated datasets
<https://data.sa.gov.au/>



Nitrogen dioxide

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

Station	1 hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Adelaide				
CHD01 - Christie Downs	0	Met	0.005	Met
ELI01 - Elizabeth Downs	0	Not Demonstrated*	0.004	Not Demonstrated*
KEN01 - Kensington Gardens	0	Not Demonstrated*	0.003	Not Demonstrated*
NET01 - Netley	0	Not Demonstrated*	0.007	Not Demonstrated*
NOR01 - Northfield	0	Met	0.006	Met
NHV01 - North Haven	0	Met	0.005	Met

* Insufficient data to demonstrate compliance, data availability was less than 75% in one or more quarters during 2018



Ozone

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

Station	1 hour		4 hours	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Adelaide				
CHD01 - Christie Downs	0	Met	0	Met
ELI01 - Elizabeth Downs	0	Not Demonstrated*	0	Not Demonstrated*
KEN01 - Kensington Gardens	0	Met	0	Met
NET01 - Netley	0	Met	0	Met
NOR01 - Northfield	0	Met	0	Met
NHV01 - North Haven	0	Met	0	Met

* Insufficient data to demonstrate compliance, data availability was less than 75% in one or more quarters during 2018



Sulfur dioxide

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

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	Not Demonstrated*	0	Not Demonstrated*	0.000	Not Demonstrated*
Spencer						
PTP01 – Pt Pirie Oliver Street	21	Not Met	1	Not Demonstrated*	0.006	Not Demonstrated*

* Insufficient data to demonstrate compliance, data availability was less than 75% in one or more quarters during 2018



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		
PTP05 – Pt Pirie Frank Green Park	0.27	Met
PTP05 – Pt Pirie Oliver Street	0.54	Not Met

PM₁₀ Particles as PM₁₀

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

Station	1 day		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Adelaide				
CHD01 – Christie Downs	4	Not Met	17.5	Met
ELI01 – Elizabeth Downs	3	Not Met	16.4	Not Demonstrated*
KEN01 – Kensington Gardens	3	Not Met	14.2	Met
NET01 – Netley	4	Not Met	25.4	Not Met
NHV01 – North Haven	3	Not Met	21.2	Not Demonstrated*
Spencer				
PTP01 – Pt Pirie Oliver Street	12	Not Met	19.7	Met
WHY07 – Whyalla Schulz Reserve	7	Not Met	17.0	Met

* Insufficient data to demonstrate compliance, data availability was less than 75% in one or more quarters during 2018

PM_{2.5} Particles as PM_{2.5}

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

Station	1 day		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Adelaide				
ELI01 – Elizabeth Downs	0	Not Demonstrated*	6.5	Not Demonstrated*
NET01 – Netley	0	Met	7.3	Met
NHV01 – North Haven	0	Met	7.2	Met

* Insufficient data to demonstrate compliance, data availability was less than 75% in one or more quarters during 2018

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Tasmania by Peter Gutwein, Minister for the Environment, Parks and Heritage, for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM 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, within 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 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. A number of Tasmanian towns have been found to experience very poor winter-time air quality due to smoke from residential woodheaters.
- 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 were revised and reissued on the 26th of June 2019 as the *Environmental Management and Pollution Control (Smoke) Regulations 2019*. The regulations continue to make the emission of excessive smoke from a residential chimney an offence. On-ground experience has indicated that councils may sometimes have difficulty in implementing these regulations. In a number of cases, excessive smoke from properties is still having some impacts at night. Resource constraints can mean councils have less capacity to respond to complaints at particular times.
- In 2009 a state-wide network of indicative level air monitoring stations referred to as BLANKET (Base-Line Air Network of EPA Tasmania) was established. In 2018-19 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 the EPA Tasmania web site.
- From 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* (CSMS) administered by the Forest Practices Authority (FPA). The CSMS 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 CSMS. Feedback from the users of the CSMS 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 (DSMP), 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 DSMP 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.
- Since winter 2016 small, indicative-quality air stations have been deployed in a number of residential backyards as part of work undertaken with local government supporting chimney-smoke complaint-resolution. The small stations, known as 'babyBLANkETs', are easily relocatable and are of low-cost. The data from these stations have at times assisted councils with their regulatory activities and also, importantly, provide a window into 'peak-residential' woodsmoke exposure. The local air quality has been found to be significantly lower in some instances.
- 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 (TEOMs) 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 exceedences of the NEPM standard for CO were recorded in this interval.
- In early 2019 a number of bushfires were ignited in Tasmania following a dry thunderstorm. The fires subsequently burnt over 200,000 hectares, mostly in the southwest and central plateau areas. There were smoke impacts across Tasmania, but these were particularly severe in the Huon Valley, south of Hobart – the elevated smoke levels measured at Geeveston station were unprecedented in 10 year data record from this site. During the fires, the Tasmanian Department of Health and Human Services issued relocation advice for the Cygnet area of the Huon Valley.

PART 2—ASSESSMENT OF NEPM 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 programmes 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}

There were no exceedences of the 24 hour PM_{10} standard of $50 \mu\text{g}/\text{m}^3$ measured in Launceston in 2018. Data capture rates for the four quarters of 2018 were 100%, 99%, 96% and 99% respectively, giving an annual rate of 98%. The annual average PM_{10} was $16.2 \mu\text{g}/\text{m}^3$, which meets the annual PM_{10} standard of less than $25 \mu\text{g}/\text{m}^3$.

PM_{2.5}

The 24-hour PM_{2.5} standard of 25 µg/m³ was exceeded on 10 days in Launceston in 2018. This is comparable with results from recent years (16 in 2017, 9 in 2016, 12 in 2015, 11 in 2014, 12 in 2013, 16 in 2012; 6 in 2011; 11 in 2010; and 12 in 2009). Overall, the 2018 result is a considerable improvement on the 35 exceedence days observed when PM_{2.5} monitoring was introduced in 2006. The annual average PM_{2.5} concentration in 2018, of 7.9 µg/m³ meets the PM_{2.5} annual standard of less than 8 µg/m³, and is comparable with annual averages from the past few years (8.6 µg/m³ in 2017, 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 2018 there were no exceedences of the 24-hour PM₁₀ standard. Provisional data capture rates in each quarter were 74%, 63%, 100%, and 51% and 72% annually. (These may be revised as full data validation has not yet been completed.) The (provisional) annual average PM₁₀ level was 11.5 µg/m³, which meets the annual PM₁₀ standard of less than 25 µg/m³.

PM_{2.5}

The 24-hour standard for PM_{2.5} of 25 µg/m³ was exceeded in Hobart on 1 day in 2018. In 2017 there were no days above the standard, in 2016 there were 3 above the standard. In 2014 and 2013 there were also 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 (5.7 µg/m³ in 2017, 5.5 µg/m³ in 2016, 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} standard of 8 µg/m³ for the thirteenth consecutive year since PM_{2.5} monitoring started at the New Town station.

Devonport***PM₁₀***

2018 was the sixth full year of operation of the Devonport air monitoring station. No exceedences of the 24 hour PM₁₀ standard were recorded in this year. The annual average PM₁₀ level was 17.4 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 exceeded the PM_{2.5} standard of 25 µg/m³ on one day during 2018. The annual average PM_{2.5} concentration of 6.6 µg/m³ met the annual standard of 8 µg/m³. Previous annual mean PM_{2.5} levels at Devonport have been 6.7 µg/m³ in 2017, 7.9 µg/m³ in 2016, 6.2 µg/m³ in 2015, 6.8 µg/m³ in 2014, and 6.4 µg/m³ in 2013.

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. 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 on any day in the year) and at least 75% of data are captured in each quarter.

The data are presented in greater detail in the annual AAQ NEPM monitoring reports for Tasmania.

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

CO

Carbon monoxide

Not measured in Tasmania for NEPM reporting.

(NEPM standard 8 hours = 9.0ppm)

NO₂**Nitrogen dioxide**

Not measured in Tasmania for NEPM reporting.

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

O₃**Ozone**

Not measured in Tasmania for NEPM reporting.

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

SO₂**Sulfur dioxide**

Not measured in Tasmania for NEPM reporting.

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

Pb

Lead

Not measured in Tasmania for NEPM reporting.

(NEPM standard 1 year = 0.50µg/m³)PM₁₀**Particles as PM₁₀**(NEPM standard 1 day = 50 µg/m³, 1 year = 25 µg/m³) Calendar year 2018

Station	Number of exceedences	Annual Average (µg/m ³)
Hobart (New Town)	0	11.5
Launceston (Ti Tree Bend)	0	16.2
Devonport (TAFE)	0	17.4

PM_{2.5}**Particles as PM_{2.5}**(NEPM standard 1 day = 25 µg/m³, 1 year = 8 µg/m³) Calendar year 2018

Station	1 year	
	Number of exceedences	Annual average (µg/m ³)
Hobart (New Town)	1	5.5
Launceston (Ti Tree Bend)	10	7.9
Devonport (TAFE)	1	6.6

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for the Australian Capital Territory by Mr Mick Gentleman MLA for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM 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 (the NEPM) Technical Papers and ACT Health's National Association of Testing Authorities' accreditation.
- The ACT's air quality in 2018 was assessed against the 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 (PM₁₀) against a lower standard of 20µg/m³ rather than the NEPM standard of 25µg/m³ from 2016.
- Due to a lack of heavy industry, the ACT has never monitored sulfur dioxide (SO₂) as it is primarily an industrial pollutant, and lead monitoring ceased in 2002 with the phase out of leaded petrol.
- The NEPM monitoring network in the ACT consisted of three monitoring stations in 2018.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

The ACT Government has been undertaking ambient air quality monitoring in Canberra since the early 1990's. The monitoring network in the ACT consists of three monitoring stations.

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 and at least 75% of data are captured in each quarter.

The ACT Air Quality Report 2018 presents the results of ambient air quality monitoring in the ACT for 2018 and assesses the results in accordance with the requirements of the NEPM.

A summary of the 2018 monitoring results is:

- Canberra's air quality was generally good, with no exceedances of the NEPM standards for carbon monoxide, nitrogen dioxide or ozone at any of the ACT's monitoring stations;
- The Air Quality Index (AQI) was in the "very good", "good" or "fair" category for over 98 percent of the time in Canberra. For more information about AQI, please visit the [Health Directorate website](#);
- The major impacts on Canberra's air quality came from the accumulation of particles from hazard reduction burns, dust storms and wood heaters; and
- Due to the prolonged drought conditions in 2018, more frequent dust storms resulted in particle levels, PM₁₀ (particles with a diameter of 10 micrometres or less) in particular, significantly above the standards across Canberra, highlighting the impacts that climate change can have on air quality.

The data are presented in greater detail in the ACT Air Quality Report 2018, available through https://www.accesscanberra.act.gov.au/app/answers/detail/a_id/1320/~air-pollution#!tabs-4

CO Carbon monoxide

(NEPM standard 8 hours = 9.0ppm)

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

NO₂ Nitrogen dioxide

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

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

O₃ Ozone

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

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

PM₁₀ Particles as PM₁₀

(NEPM standard 1 day = 50µg/m³)

Station	Number of exceedances	NEPM goal compliance
Monash	4	Met#
Floreay	3	Met#
Civic	6	Met#

all exceedances were directly associated with exceptional events such as hazard reduction burn or dust storm, therefore are excluded for the purpose of reporting compliance.

PM_{2.5}

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

Station	1 year	
	Number of exceedances	Annual average (µg/m ³)
Monash	2#	6.8
Florey	2#	7.1
Civic	1#	6.5

only one of the exceedances at Monash (27 May 2018) was a result of increased domestic wood heater emissions during the winter months. The other four exceedances were directly associated with exceptional events such as hazard reduction burn or dust storm, therefore are excluded for the purpose of reporting compliance.

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 Eva Lawler, Minister for Environment and Natural Resources for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The Northern Territory Environment Protection Authority is responsible for implementing the Ambient Air Quality NEPM in the Northern Territory through the provisions of the *Waste Management and Pollution Control Act 1998* and the *National Environment Protection Council (Northern Territory) Act 1994*.
- Major pollutants in the Darwin air shed - PM_{2.5} and PM₁₀ - are associated with smoke from 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.
- The Stokes Hill air quality monitoring station was installed in 2017 to monitor potential air quality impacts from industrial development and increased shipping traffic in Darwin Harbour. The Stokes Hill monitoring station collected sufficient data over this reporting period to enable assessment against NEPM goals for that site for the first time.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

- During 2018, all the ambient air quality monitoring stations in the Darwin region showed no exceedances of the AAQ NEPM standards for sulfur dioxide (SO₂) and nitrogen dioxide (NO₂). However, as explained below, although some exceedances were recorded for carbon monoxide (CO), ozone (O₃), PM₁₀ and PM_{2.5}, the NEPM goals were met for their respective short-term AAQ standards. Conversely, the NEPM goal for the long-term PM_{2.5} standard was not met at any of the three monitoring stations.
- Carbon monoxide: There was one exceedance of the 8-hour rolling average for CO. However, since one exceedance day per year of the standard is permitted, compliance with the NEPM goal for carbon monoxide was met at all monitoring stations.
- Ozone: To comply with the NEPM goal for ozone one exceedance day is allowed for the 1-hour and 4-hour standards. There was one exceedance of the 4-hour rolling average standard for ozone. Compliance with the NEPM goal for ozone was met at all monitoring stations.
- PM₁₀: To comply with the 24-hour NEPM goal for particulates as PM₁₀ no exceedance of the 24-hour standard is allowed, unless determined as an exceptional event. All the recorded exceedances were linked to hazard reduction burns, which are considered exceptional events. All monitoring sites also complied with the annual NEPM goal for particulates as PM₁₀.
- PM_{2.5}: To comply with the 24-hour NEPM goal for particulates as PM_{2.5}, no exceedance of the 24-hour standard is allowed, unless determined to be an exceptional event. During 2017, all recorded exceedances of the PM_{2.5} standard were related to hazard reduction burns or other natural fire activities and are therefore classified as exceptional events. However, none of the monitoring sites complied with the annual NEPM goal for particulates as PM_{2.5}.

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 at least 75% of data are captured in each quarter and 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 caused by an exceptional event).

The data are presented in detail at <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.



Carbon monoxide

(NEPM standard 8 hours = 9.0ppm)

Station	Number of exceedances	NEPM goal compliance
Palmerston	0	Met
Stokes Hill	0	Met
Winnellie	1	Met



Nitrogen dioxide

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

Station	1 hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Palmerston	0	Met	0.0024	Met
Stokes Hill	0	Met	0.0020	Met
Winnellie	0	Met	0.0017	Met



Ozone

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

Station	1 hour		4 hours	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Palmerston	0	Met	1	Met
Stokes Hill	0	Met	1	Met
Winnellie	0	Met	0	Met

SO₂ Sulfur dioxide

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

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	0	Met	0	Met	0.0004	Met
Stokes Hill	0	Met	0	Met	0.0002	Met
Winnellie	0	Met	0	Met	0.0001	Met

Pb Lead

(NEPM standard 1 year = 0.50µg/m³)

Station	Annual average (µg/m³)	NEPM goal compliance
No monitoring for lead is undertaken in the NT		

PM₁₀ Particles as PM₁₀

(NEPM standard 1 day = 50µg/m³)

Station	Number of exceedances	NEPM goal compliance
Palmerston	5	Met
Stokes Hill	6	Met
Winnellie	5	Met

PM_{2.5} Particles as PM_{2.5}

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

Station	1 year	
	Number of exceedances	Annual average (µg/m³)
Palmerston	15	8.7
Stokes Hill	13	8.3
Winnellie	19	9.1

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 the Commonwealth by the Department of the Environment and Energy for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- Australian Government agencies continue to conduct site assessments in accordance with the Assessment of Site Contamination NEPM (ASC NEPM).
- The ASC NEPM is an example of partnering among all jurisdictions. It provides a practical, science-based framework for Australian Government agencies to use in assessing contamination.
- The approaches in the ASC NEPM underpin the collaborative work among the Commonwealth, states and territories on the PFAS National Environmental Management Plan (PFAS NEMP), published in February 2018. Further national guidance for version 2.0 of the PFAS NEMP was developed, together with extensive stakeholder engagement and consultation, across 2018-19. Together, the ASC NEPM and the PFAS National Environmental Management Plan set out nationally-agreed approaches, guidance and standards for understanding and assessing PFAS contamination.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

- The Assessment of Site Contamination NEPM (ASC NEPM) provides a consistent, effective, and efficient national methodology which contributes to achieving Departmental goals, particularly in the context of the *Environment Protection and Biodiversity Conservation Act 1999*. It is widely used across Australia by industry, site owners, and governments.
- The ASC NEPM provides useful guidance on assessment of contaminated sites and includes investigation levels for certain toxicants. The next review of the ASC NEPM would be an opportunity to develop additional investigation levels for contaminants such as certain PFASs, persistent organic pollutants, mobile chemicals and endocrine disrupting chemicals. It would also provide an opportunity to update the techniques for laboratory analysis of toxicants in air, soil, and water.

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. Matt Kean MP, Minister for Energy and Environment, for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The NSW Environment Protection Authority (EPA) considers the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) when making a decision on whether contaminated land requires regulation under the *Contaminated Land Management Act 1997* (NSW).

In 2018-19, the NSW EPA was notified of 41 contaminated sites, nine new sites were declared to be significantly contaminated under the *Contaminated Land Management Act 1997*, and regulation of eight sites was ended after remediation.

The NSW EPA verifies that site audits and site audit statements have been undertaken with due regard to the NEPM through its quality assurance program. In 2018-19 accredited site auditors issued 250 site audit statements following 199 statutory audits and 51 non-statutory audits under the *Contaminated Land Management Act 1997*.

Overall, the NEPM has improved the efficiency of regulating contaminated sites in NSW.

The limited number of derived ecological investigation levels (EILs) adopted into the NEPM continues to present challenges. Whilst there is already a framework for deriving EILs outlined in NEPM Schedule B5b, the NSW EPA encourages more work to develop and implement a consistent framework for adopting new EILs into the NEPM (e.g. for benzo(a)pyrene).

There is also some contention within industry regarding the definition of friable asbestos within the NEPM (Schedule B1 Vol 2), and the misinterpretation of guidance when completing an asbestos in soils assessment and resulting remediation (Schedule B2 Vol 3).

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The NSW EPA is continuing to update relevant legislative instruments and guidance to incorporate or refer to the 2013 amendments to the NEPM.

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 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

As previously noted, the transition period for the revised ASC 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 (HILs) 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 HILs 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, has been raised with enHealth and is still to be resolved.
- An 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 PFAS National Environmental Management Plan (NEMP) has begun to address some of these issues and is being iteratively revised to develop further guidance for more complex issues such as PFAS level in spoil and wastewater issues.

In response, Victoria has contributed to the following:

- As part of the reform to the environment protection framework, EPA Victoria has a dedicated waste team who have worked to address the characterisation of soil/fill in waste regulations and associated guidelines to make it clear what will go to landfill and this included a review of soil fill acceptance criteria.
- 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 HIL 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 NEPM has been incorporated into the subordinate legislation framework under the *Environment Protection Amendment Act 2018*. A new provision in the *Environment Protection Amendment Act 2018* enables the declaration of a substance to be an environmentally hazardous substance (ESHO). An ESHO can potentially prohibit, control or regulate emerging contaminants. While, emerging contaminants have not been addressed at this stage in regulations or the ERS, these instruments could be used in the future, along with the ESHOs to address emerging contaminants
- Contributed to the development of the PFAS NEMP.

PART 2—ASSESSMENT OF NEPM 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 is a National Remediation Framework under development—this would not be a NEPM itself but would complement the ASC. A number of the draft documents have been circulated publicly for comment, more details are available: <http://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 Hon. Leeanne Enoch MP, Minister for Environment and the Great Barrier Reef, Minister for Science, and Minister for the Arts for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The Department of Environment and Science (DES) is the central administering authority for contaminated land in Queensland under the *Environmental Protection Act 1994* (EP Act).
- The first step in the management of land contaminated or presumed to be contaminated in Queensland is the listing of the land on either the Environmental Management Register (EMR) or the Contaminated Land Register (CLR). Land may be included on the environmental management register if a *notifiable activity* prescribed in Schedule 3 of the EP Act has been carried out on the land or the land is otherwise contaminated land. Land may be included on the contaminated land register if it is necessary to take action to remediate the contaminated land to prevent serious environmental harm.
- Commencing on 1 July 2018, under the *Planning Regulation 2017*, prohibited development is that which is commenced on land listed on the EMR or CLR, unless the land is remediated or certified fit for purpose. The Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) is the administering authority of the planning regulation. DES provides DSDMIP with advice on matters related to contaminated land.
- It is mandatory in Queensland 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 DES.
- Queensland currently has 21 appointed contaminated land auditors to perform regulatory functions under section 568 of the EP Act.
- The following relevant operational data associated with NEPM implementation were collected in the reporting period 2018-19
 - 82 Contaminated Land Investigation Documents were reviewed for compliance with NEPM prior to statutory decisions regarding EMR/CLR status of the subject land. All reports submitted as investigation documents were reviewed by approved auditors.
 - 46 sites were listed on the EMR for a hazardous contaminant.
 - 96 sites were listed on the EMR as a notifiable activity
 - DES appointed three contaminated land auditors during 2018-19, which includes mutual recognition on the basis of approvals held in other jurisdictions. These auditor applications are assessed by a DES approved technical panel who are engaged to review contaminated land auditor applications on behalf of DES.
 - 46 sites were finalised as being adequately assessed according to NEPM, remediated and removed from the EMR.
 - 7 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.
 - 276 permits were issued for the transport and disposal of contaminated soil in accordance with the EP Act.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The 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 through the provisions of the operational policy and guidelines relating to assessment of contaminated land. All applications to DES for statutory decisions about site contamination and changing the status of land on the EMR/CLR must demonstrate compliance with the current NEPM in accordance with the EP Act.

The NEPM continues to be used as an effective technical basis for site assessment for contaminated site professionals operating in Queensland.

The current NEPM addresses 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 DES in internal review of assessment reports involve a review of the practitioner's adherence to the NEPM.

The establishment and implementation of the contaminated land auditor approval framework has successfully led to the certification of 21 auditors. The selection and approval of the persons to be auditors has been structured around Schedule B9 of the amended NEPM 1999.

Implementation of the general provisions of the NEPM would be improved by additional guidance for particular common types of contamination. This includes fluorinated organic chemicals that are 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. Stephen Dawson MLC, Minister for Environment; Disability Services; Electoral Affairs for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The Department of Water and Environmental Regulation (DWER) 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 DWER 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 2019, 220 known or suspected contaminated sites were reported to DWER compared with 188 in the previous year. In the same period, DWER received 53 mandatory auditor's reports related to contaminated sites, and a further 29 voluntary auditor's reports or addenda. 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 CS Act. The Department classified 368 sites (including reclassifications) during the year, bringing the total number of classified sites to 4001. As of 30 June 2019, 1096 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, the environment and/or environmental values.
- Environmental practitioners' awareness of the amended NEPM requirements has continued to improve in WA and as a result, the assessment reports submitted to DWER generally apply the guidance in an appropriate and consistent manner.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

DWER 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 (EILs) 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 EILs, 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 EILs 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. David Speirs, Minister for Environment and Water, for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM 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 ASC NEPM) in South Australia.
- Site contamination is regulated by the EPA through a framework established under the *Environment Protection Act 1993* (the Act).
- The ASC NEPM informs the EPA's established processes of assessment and remediation as well as its risk-based regulatory decision making and actions in relation to site contamination. The purpose and desired environmental outcome and the technical guidance of the ASC NEPM continues to be supported by the EPA through published guidelines and advice.
- The EPA provides written and verbal guidance and information in respect to site contamination and the ASC NEPM to the community, peak groups, industry, developers, site owners, planning authorities, site contamination consultants and accredited site contamination auditors. Selected guidelines are 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 2018-2019 reporting period, the EPA received 112 notifications of site contamination that affects or threatens underground water. In the same period, the EPA recorded 43 site contamination audit reports on the Public Register, required to be kept by the EPA under the Act. There are 24 site contamination auditors accredited by the EPA in South Australia.
- Site contamination advice, guidelines and an index of site contamination information and auditor register are available on the EPA website.
- Actions which support the implementation of the ASC NEPM in South Australia during 2018/2019 include the following:
 - The EPA continues to update and revise guidance on the processes for assessment, remediation and auditing of site contamination to support the ASC NEPM.
 - Establishment of groundwater prohibition areas to protect the community from exposure to contaminated groundwater. Work on further groundwater prohibition areas continues to be undertaken.
 - Implementing orphan site contamination assessment programs to investigate identified risks to public health.
 - Use of the EPA regulatory framework and statutory tools to support consistency and predictability in regulatory decision-making in relation to site contamination.
 - Implementation of a policy, which came into effect on 1 August 2019, which requires site contamination reports provided to the EPA to be signed by a certified site contamination practitioner.
 - Ongoing engagement with local communities impacted by site contamination.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The EPA continues to strengthen its systems, communications, guidance and tools to support the implementation of the NEPM with consideration of the most current technical advice and best practice. Several important issues which influence the effectiveness of the NEPM in South Australia include the following:

Environment Protection Policy

The EPA is progressing the development of an environment protection policy under the Act to give mandatory effect to the ASC NEPM (as amended in 2013).

Development and planning

The planning system has an important role in ensuring risk posed by known or suspected site contamination is considered when land use changes or is otherwise developed. The EPA is collaboratively working with the Department of Planning, Transport and Infrastructure on a site contamination planning framework to properly integrate site contamination as part of the current state-wide planning reform. Proposed policy, referral triggers and draft practice direction on the assessment of site contamination are currently out for consultation.

National harmonisation of auditor accreditation

The national harmonisation of auditor accreditation requirements, consistent with Schedule B9 of the ASC 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 and implementation of an agreed national approach.

Community and stakeholder engagement

The EPA continues to work to deliver open and effective engagement and the exchange of information with local communities affected by site contamination and to ensure that appropriate engagement is planned and implemented by all parties through improved and updated guidance and access to specialist expertise within the EPA.

Review issues

The emergence of new issues where there may be limited or no specific guidance in the ASC NEPM continues to provide challenges in relation to the assessment of risk to human health and the environment. It is noted the 2019 NEPC Act review has made recommendations in relation to a new framework for designing, implementing and monitoring NEPMs. The recommended amendments to the Act have the potential for ensuring the ASC NEPM remains current national best practice guidance.

In addition, planning for the currently in-built review of the ASC NEPM is 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 Hon. Peter Gutwein MP, Minister for Environment, Parks and Heritage for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

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

The NEPM is implemented in the following ways:

- Notices issued under the *Environmental Management and Pollution Control Act 1994* routinely require NEPM compliant environmental site assessment.
- Works required pursuant to the *Environmental Management and Pollution Control (Underground Petroleum Storage Systems) Regulations 2010* (UPSS Regulations) must comply with the NEPM.
- Contaminated land issues that are being managed through a collaborative approach adopt the NEPM as the primary guidance document for assessment of contaminated land.
- Tasmanian Planning Authorities may require NEPM compliant assessments where land changes to a more sensitive use.
- The Potentially Contaminated Land Code applies to planning schemes and will be progressively implemented by Tasmanian Planning Authorities. The Code requires that environmental site assessments submitted to satisfy planning purposes are prepared in accordance with the NEPM.
- Ensuring contaminated land site assessor's work is compliant with the NEPM is a key focus in Tasmania. To help improve work quality and outcomes in the assessment and management of site contamination, the Director, EPA now requires that contaminated site assessments are completed by persons certified under an approved accreditation scheme.
- Regulatory effort on site contamination continues to be drawn to the management of pollution associated with service stations. Through the implementation of UPSS Regulations, regulatory focus has shifted towards prevention of pollution arising from UPSS, however management of contaminated sites remains a priority.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

In Tasmania, the implementation of the NEPM has helped ensure a consistent and authoritative framework for the assessment and management of contaminated sites.

Tasmania supports the continued development of the NEPM including guidance on management of emerging contaminants of concern and ongoing addition and review of soil and groundwater criteria.

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 2019.

PART 1 — IMPLEMENTATION OF THE NEPM 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 (Assessment of Site Contamination) Measure (the NEPM). In the ACT the Environment, Planning and Sustainable Development Directorate (EPSDD) is responsible for the development of legislation and policy to ensure the NEPM is appropriately implemented.

The provisions of the NEPM are implemented under the *Environment Protection Act 1994* (the Act). The Contaminated Sites Environment Protection Policy (EPP), made under the Act, is the primary policy document for the assessment and management of contaminated land in the ACT. The EPP was updated in December 2017 to reference the amended NEPM as the key resource for assessing contaminated land in the ACT.

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

Contaminated land professionals working in the ACT have not raised any significant issues with respect to their implementation of the NEPM. Consultants and Auditors have, however, commented on the need to extend the scope of the NEPM to include site remediation and management. The ACT Environment Protection Authority (EPA) raised this issue as part of its comments on the review of the NEPC Act.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

The NEPM continues to be the primary reference tool used by contaminated land practitioners in the ACT and remains an effective means of ensuring a nationally consistent approach to contamination assessment.

Practitioners have expressed the need, however, for legislative or other changes to NEPC processes to allow for the inclusion of criteria for emerging contaminants in the NEPM outside of the formal review process and the inclusion of guidance in relation to site remediation and management in line with the proposed National Remediation Framework.

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 Eva Lawler, Minister for Environment and Natural Resources for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In the reporting period of 1 July 2018 to 30 June 2019 the Northern Territory (NT) has continued to implement the ASC NEPM.
- The Northern Territory Environment Protection Authority (NT EPA) has continued to disseminate the Northern Territory Contaminated Land Guideline published in 2017, covering all aspects of the ASC NEPM and its application with the relevant NT legislation. The NT EPA has commenced discussions with relevant industry bodies to assist with furthering the education of consultants involved with contaminated site assessment, the planning process, and those carrying out development within the NT.
- The NT Government has committed to a range of reforms to improve the environmental management regulatory framework. As part of the reforms the NT is reviewing its regulatory framework for contaminated land management to identify improvements that will assist to minimise the environmental impacts of contamination in the NT from past, current and future land uses.
- Asbestos, per- and poly-fluoro alkyl substances (PFAS) and herbicides and pesticides (including Mirex) continue to be identified as contaminants of concern in the NT.
- Asbestos matters are being addressed through the implementation of an NT interagency asbestos committee, including development of an asbestos register which will form part of the contaminated sites register. The interagency asbestos committee has developed a new website to act as a “one stop shop” to help inform Territorians how to deal with their asbestos concerns, and which agency would be the lead depending on the specific situation. The NT EPA and the Commonwealth have collaborated on issues such as the ongoing asbestos and PFAS issues identified at RAAF Base Darwin.
- The NT EPA has been actively involved in the investigation, assessment and management of sites that have potentially been impacted by PFAS. The NT EPA participates in a variety of PFAS steering committees and working groups, which allows the NT EPA to be at the forefront of this environmental issue and provide input on a Territory and national scale.
- Screening level and preliminary investigations are ongoing on PFAS prioritised sites across the Territory, to determine the presence or absence of sites impacted with PFAS. Based on the results, further investigations may be required to determine appropriate management measures for these sites.
- 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 NT. The NT EPA is continuing to provide advice to proponents regarding the NT planning process when they are changing the use of former market gardens to more sensitive uses like residential, to ensure preliminary site investigations are undertaken in accordance with the ASC NEPM.
- The NT EPA has responded to enquiries regarding historical sites that may pose a risk of contamination, including former wartime defence establishments, and waste disposal locations operating prior to self-governance and the subsequent formation of the NT Government and the local government entities.
- A challenge for the NT EPA includes the inappropriate use of the ASC NEPM in illegal dumping matters to justify the illegal dumping of waste.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The NEPM has allowed for a ‘level playing field’ for site contamination assessment and remediation to be established in the Northern Territory. It continues to help 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 ASC NEPM within the NT is required to ensure that all parties are clearly aware of all requirements outlined within the ASC NEPM. This is being progressed 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 Sussan Ley MP, Minister for the Environment for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The National Environment Protection (Diesel Vehicle Emissions) Measure 2001 (Diesel NEPM) aims to reduce exhaust emissions from diesel vehicles, by facilitating compliance with in-service emissions standards for diesel vehicles. It forms part of an integrated suite of national approaches to address emissions from diesel vehicles, including the Australian Design Rules and fuel quality standards, managed by the Commonwealth. The Diesel NEPM targets “in service” vehicles (vehicles in use, after the point of sale), by supporting initiatives implemented by states and territories such as smoky vehicle programs.

The *Fuel Quality Standards Act 2000* (the Act) provides a legislative framework for setting and enforcing national fuel quality and fuel quality information standards in Australia. These standards are an important safeguard for consumers and the environment.

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; and
 - ii. facilitate the adoption of better engine technology and emission control technology; and iii. allow the more effective operation of engines; and
- b) ensure that, where appropriate, information about fuel is provided when the fuel is supplied.

In 2018-19, authorised fuel inspectors visited 363 sites and tested 1380 samples for compliance with the Act. The Department of the Environment and Energy identified 20 instances of non-compliance with the Act. The Department engaged with stakeholders following these instances to encourage voluntary compliance with the Act.

In March 2019, the Australian Government made improvements to petrol and diesel fuel quality standards to ensure people have access to better quality fuels and to more closely align with international practice. This is an important step that will provide considerable health and environmental benefits by reducing air pollution and saving billions of dollars in health costs.

All nine sun-setting fuel quality standards (petrol, automotive diesel, autogas (LPG), biodiesel, ethanol E85, ethanol and ethanol E85 information standards, regulations and register of prohibited fuel additives guidelines) have been remade and will commence on 1 October 2019.

Petrol quality will be improved by setting a lower pool average for aromatics from 2022 and lowering the sulfur limits from 2027. The 2027 date does not preclude the earlier availability of low sulfur petrol in the market.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

In April 2018, Australian Environment Ministers endorsed a work plan under the National Clean Air Agreement, which included a review of the need for the Diesel NEPM. In 2018 – 19 the Commonwealth undertook a survey of jurisdictional needs for and activity under these NEPMs. The survey responses indicated that at this stage the NEPM remains useful in providing both guidelines for, and a mechanism for reporting on, in-service diesel emission reduction programs.

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. Matt Kean MP, Minister for Energy and Environment, for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In NSW, 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 emissions from the in-service diesel fleet.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

In NSW, the Environment Protection Authority (EPA) and NSW transport agencies, Roads and Maritime Services and State Transit¹, continue to collect data on the diesel vehicle fleet and implement a range of NSW Government funded programs to reduce diesel emissions. In 2018-19, NSW continued the Smoky Vehicle Program, implementation of the EPA's Diesel and Marine Emissions Management Strategy, the RMS Clean Fleet Program, and State Transit'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 20.22 per cent of the total NSW fleet at 30 June 2019 (see Table 1 below). This is compared to 19.50 per cent in 2018, 18.14 per cent in 2017.

Roads and Maritime Services registration data indicate that, between June 2018 and June 2019, the number of diesel vehicles registered in NSW increased by 66,209 or 5.18 per cent. Light commercial vehicles increased by 8.34 per cent over the previous year, and constitute the largest sector of the diesel fleet at 39.08 per cent. Off-road passenger vehicles account for 34.7 per cent of the diesel fleet. Together, these categories account for 73.78 per cent of the total diesel fleet in NSW. Table 2 shows changes in diesel vehicles by category between June 2018 and June 2019.

1 Formerly known as the State Transit Authority

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

NSW June 2019	Diesel vehicle categories							
	Passenger vehicles	Off-road passenger vehicles	Light commercial vehicles	Heavy trucks	Prime movers	Small buses	Buses	Other
Diesels in total NSW fleet	2.73%	7.02%	7.90%	1.55%	0.34%	0.16%	0.20%	0.17%
Vehicles by category in diesel fleet	13.49%	34.70%	39.08%	7.66%	1.66%	0.77%	1.00%	0.83%
								100%

Source: Roads and Maritime Services registration data (June 2019).

Table 2: Change in diesel vehicles by category

Vehicle type	Number of diesel vehicles		Change (number)	Percentage change	Proportion of total decrease	Proportion of total increase
	Jun-18	Jun-19				
Passenger Vehicles	173,911	181,273	7,362	4.23%		11.12%
Off-Road Passenger Vehicles	449,281	466,232	16,951	3.77%		25.60%
People movers	10,379	10,834	455	4.38%		0.69%
Small Buses	10,241	10,412	171	1.67%		0.26%
Light Trucks	484,669	525,083	40,414	8.34%		61.04%
Light Plants	1,362	955	-407	-29.88%	-0.61%	
Buses	13,276	13,423	147	1.11%		0.22%
Heavy Trucks	101,182	102,919	1,737	1.72%		2.62%
Prime Movers	21,972	22,277	305	1.39%		0.46%
Heavy Plants	3,632	3,114	-518	-14.26%	-0.78%	
Other	7,545	7,137	-408	-5.41%	-0.62%	
Total	1,277,450	1,343,659	66,209	5.18%		

Source: Roads and Maritime Services registration data (June 2019).

Diesel vehicle emissions estimates

Diesel vehicles made up 20.22 per cent of the total NSW fleet as at 30 June 2019, 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 Sydney² region.

Based on projections from the 2008 Air Emissions Inventory for the NSW Greater Metropolitan Region, diesel vehicles currently contribute approximately 58 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.

Except for 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 NSW 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. Should this proposal be adopted, significant emission reductions will result 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 ten seconds. Penalty notices may be issued to the registered owners of vehicles emitting excessive air impurities. The public can also report smoky vehicles via the EPA's Environment Line website or mobile phone application. An average of 117 smoky vehicle reports are received each month from the public (over 1,400 public reports over the year), indicating a high level of awareness in the community of the unacceptability of excessive visible emissions.

In 2018-19, the EPA issued 835 advisory letters based on public reports, of which 623 advisory letters were to diesel vehicle owners.

Additionally, 35 defective vehicle notices were issued in 2018-19 of which 30 were diesel vehicles. 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.

² '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 <http://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.

There has been a trending reduction in the number of diesel vehicles that received fines over recent years, as the EPA has received significantly fewer reports from Roads and Maritime Services (RMS) of vehicles emitting excessive smoke in Sydney's M5 East Tunnel. The RMS Smoky Vehicle Enforcement Project, which previously operated in the M5 East Tunnel, concluded in 2017-18.

Table 3: Smoky vehicles - actions taken

	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	July 17 – June 18	Jul 18 – June 19
Total number of vehicles that received fines	373	303	301	186	114	289	78	89	75	6	0
Diesel vehicles that received fines	351	278	286	173	109	283	76	89	74	6	0
Percentage of all vehicles fined that were diesel vehicles	94.1%	91.7%	95%	95%	96%	98%	97%	100%	99%	100%	0
Total vehicles that received advisory and warning letters	530	740	750	556	552	891	812	782	957	681	835
Diesel vehicles that received advisory and warning letters	123	133	135	96	74	462	423	433	475	438	623
Percentage of all vehicles that received advisory and warning letters that were diesel vehicles	23.2%	17%	18%	17%	11%	52%	52%	55%	59%	64%	75%

Audited maintenance programs for diesel vehicles

NSW Roads and Maritime Services operates an audited maintenance program known as “Clean Fleet”. This was launched in 2006 and has approximately 6,725 vehicles in the program. In the absence of ongoing Commonwealth funding for Diesel NEPM programs, there were no promotional activities or training courses held under the program in 2018-19, and a small reduction in participation was evident.

Other programs

State Transit diesel bus upgrade program

Since 2006 the NSW State Transit has been replacing older diesel buses in the Sydney Region with Euro 5 and EEV (enhanced environmentally friendly vehicle) buses that use AdBlue as a catalyst to reduce emissions of oxides of nitrogen (NO_x). EEV vehicles have the same NO_x limits as Euro 5, and tighter particle limits (one third lower particle levels under the European transient test cycle). 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 and water vapour by means of a chemical reaction.

In 2018-19, State Transit received 65 new Euro 5 or EEV diesel buses into its bus fleet, with 87% of the fleet now Euro 3 or higher emissions standard (up from 82% in 2017-18), and 53% of the fleet Euro 5 or EEV emissions standard (up from 47% Euro 5 or equivalent in 2017-18). State Transit overall fleet numbers and emissions are reduced compared with the 2017-18 financial year, as State Transit no longer operates bus services in the South West Region (Region 6). These services are now operated by Transit Systems. Subsequently, State Transit's fleet size has decreased from 2,046 buses as at June 2018, to 1,449 at June 2019.

Non-road diesel vehicle programs

Construction Industry

In 2018-19 DPIE continued to administer the NSW Government Resource Efficiency Policy (GREP). The GREP includes requirements to address non-road diesel engine emissions through government procurement and contracts. DPIE undertook a review of the GREP in 2017-18 to analyse whole-of-government progress towards implementation, identify challenges faced by agencies, and determine if reforms are required. The updated GREP was published in February 2019.

For non-road diesel engines, government agencies must continue to comply with EU or US EPA standards when purchasing or leasing such equipment. Agencies must consider air emissions from contractor-supplied equipment in tender processes for construction projects over \$10 million. The tender selection process either incorporates a weighting for air emission standards in conjunction with other environmental considerations, or a statement by contractors on how they will reduce emissions from their equipment. Air emission standards of engines are aligned with the current EU and US EPA levels which are accepted internationally, with a lead time of two years compared to the introduction dates overseas.

Coal Mines

Following consultation on best practice measures to reduce non-road diesel exhaust emissions at NSW coal mines, in 2017 the EPA released a draft Pollution Reduction Study (PRS) and draft Special Licence Condition (SLC) for consultation with the coal mining industry. The draft PRS requires operating open-cut coal mines to provide information on the emission performance of the existing non-road diesel fleet, measures already adopted, and investigation of any further reasonable and feasible emission reduction measures that could be implemented. The draft SLC requires new non-road diesel equipment commissioned at NSW coal mines to meet the US EPA Tier 4 final emission standard. Over 2018 the EPA continued to review the issues raised by industry in submissions and is considering the appropriate response.

Locomotives

In February 2017 the EPA published the Diesel Locomotive - Fuel Efficiency and Emissions Testing report. Together with the 2015 Diesel locomotive emissions reduction technology study, this demonstrated that particle emission reductions conforming to US Tier 0+ emission standards can be achieved through emission upgrade kits or other locomotive upgrade programs. Amendments to the *Protection of the Environment Operations Act 1997* to regulate railway rolling stock operations were prepared in 2018 and came into effect in July 2019. The regulatory amendments mean that operators of rolling stock are required to hold an environment protection licence and are directly accountable for their environmental performance, including management of air emissions.

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 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The diesel NEPM in Victoria is administered and implemented by the *Environment Protection (Vehicle Emissions) Regulations 2013*.

These regulations have been reviewed and incorporated into the *Environment Protection Regulations* (Exposure Draft stage). These will go to public comment in 2019/20 to be ready for the commencement of the *Environment Protection Act 2017* in 2020.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

The Environment Protection Authority Victoria (EPA) has run a public smoky vehicle reporting program for many years. The numbers of vehicles reported provide some insight into the level of community awareness and concern into diesel vehicle exhaust emissions.

The number of smoky vehicles reported since the program began in 2005/06 is declining, which may indicate that there are fewer smoky vehicles being encountered on Victorian roads.

Over the past five years, the number of diesel vehicles reported as smoky has steadily declined. This may indicate that there are fewer diesel vehicles out of compliance with in-service emissions standards.

There is no current information available on the level of diesel vehicle emissions to ambient air. Retail diesel fuel sales in Victoria have risen by 4.4% (energy.gov.au) and the number of diesel vehicles registered in Victoria has risen by 8% (abs.gov.au). Emissions from diesel engines are likely to have gone up due to the increased fuel consumption, outweighing any gains from engine efficiency from one year to the next.

Smoky vehicles program

In accordance with Schedule A(1) of the NEPM, (Guidelines on Smoky Vehicles Program), collection of annual statistics would assist the ongoing review of programs. Information to be collected could include:

Victoria's public smoky vehicle reporting program allows members of the public to report vehicles (diesel, petrol or LPG) identified as continuously emitting smoke for more than 10 seconds to the EPA. EPA also operates an official smoky vehicle enforcement program where EPA or Victoria Police officers can report vehicles using the "10-second" smoke rule.

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 EPA, VicRoads or the Police. In 2018/2019, the program resulted in 842 smoky vehicle letters being issued for public reports and 198 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 ten years. Generally, there is a slow downward trend in the number of letters issued over recent years in both streams of the program. The temporary drop in public reports in 2018-2019 was affected by reporting issues.

Table 1: Number of cautionary letters issued under the smoky vehicles reporting program from public and official reports over the last 10 years.

Year	2009/10	2010/11	2011/12	2012/13	2013/14*	2014/15*	2015/16*	2016/17	2017/18	2018/19
Number of letters from public reports	6177	5766	4895	3910	2012	2124	1901	1815	1777	842
Number of letters from official reports	445	630	495	554	145	193	95	196	459	198

* 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 – 2015/16, the above table has been updated to reflect the addition of these

Diesel vehicle emission testing and repair programs

In accordance with Schedule A(2) of the NEPM: In order to assess the emissions benefit from programs, it is critical that data is collected and reported at the beginning, during and end of the program. The data will enable participants to assess and report the emissions reductions from their operations and will also assist regulatory authorities in assessing the impacts on emissions and air quality overall. The data collected should include:

Victoria has not had an emission testing and repair program since 2016.

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 in Queensland by the Honourable Mark Bailey - Minister for Transport and Main Roads, for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The *National Environmental Protection Council (Queensland) Act 1994* provides the framework for implementing the National Environmental Protection Diesel Vehicle Emissions (DVE) Measure in Queensland. The Department of Transport and Main Roads (TMR) is responsible for implementing and reporting on the DVE NEPM. Queensland has 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 NEPM EFFECTIVENESS

Motor vehicles are the main contributor to ambient carbon monoxide, oxides of nitrogen (NO_x) and particulate matter (PM) concentrations in urban areas. The Environmental Monitoring and Assessment Sciences Division, Department of Environment and Science (DES) is responsible for monitoring air quality in Queensland.

Air quality in Queensland for the 2018 Ambient Air Quality NEPM reporting period has been generally good. Monitored pollutants have exceeded national standards or guidelines very few times, complying with national air quality standards for five of the six major air pollutants. This has been achieved despite the pressures from a growing population, an increase in motor vehicle use and industrial growth. Air quality improvements are a result of Queensland's regulation of industry, stricter emission standards for motor vehicles and new emission reduction technology.

There were only two days in South East Queensland (SEQ) where air quality for visual amenity standards was classed as poor, indicating that at least one air quality monitoring station did not meet NEPM goals. Gladstone recorded three poor days, while Townsville and Mackay recorded no poor days in the reporting period. The air quality trend for human health found zero poor days registered in SEQ, Mackay and Gladstone with only one day classed as poor in Townsville. There have been periods of elevated particle levels in all areas of Queensland where monitoring takes place, however, these are associated with dust storms and bushfires rather than transport related emissions. Recent studies have indicated that bush fires and prescribed burning may have more impact on air quality than originally thought.

The Australian Government plays a key role in achieving air quality goals, chiefly through its powers to set emission standards for new vehicles through the Australian Design Rules (ADRs) and fuel quality standards. ADRs are established under the *Motor Vehicle Standards Act 1989* (Cwth), while vehicle fuel quality standards are set through the *Fuel Quality Standards Act 2000* (Cwth).

Responding to growing concern over particle and NO_x pollution from diesel vehicles, the National Environment Protection (Diesel Vehicle Emissions) Measure was established in 2001. Unlike the ADRs that set standards for new petrol and diesel vehicles, the diesel emissions NEPM targets in-service vehicles. It is then states' responsibility, establishing a range of strategies for governments to employ to reduce emissions. The Commonwealth Department of Infrastructure and Regional Development released a discussion paper in February 2016. This was followed by the release of three further consultation papers:

- a draft Regulation Impact Statement (RIS) on improving the efficiency of new light vehicles
- a draft RIS on strengthening noxious emissions standards for light and heavy vehicles
- a discussion paper on improving fuel quality standards.

No further work has been done to introduce any new standards or legislation to control vehicle emissions in 2018. The current standard for heavy vehicle emissions remains ADR80/03, and 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 they are yet to be implemented in Australia, there are Euro VI compliant heavy vehicles in use in Queensland. The new ADR, once implemented, 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.

Other programs currently in place to complement the ADRs and mitigate diesel vehicle emissions in Queensland are described below.

Smoky vehicles program

The Smoky Vehicle Online Reporting Program currently provides the community with an avenue for reporting vehicles exceeding the ten-second smoke rule, which requires all vehicles to meet smoke opacity standards. Vehicles that emit smoke continuously for a period of ten seconds or more are in breach of the ten second rule.

Once reported data is matched with the information provided, a letter may be sent to the registered 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 (PVO) which requires their vehicle to be checked for defects by a Transport Inspector. However, the correlation between smoke and other pollutants is uncertain and pollutants may not be visible.

For the period 1 July 2018 to 30 June 2019 there were a total of 2,331 vehicles reported through the smoky vehicle online reporting form in Queensland. Of the reported vehicles 804 were diesel powered.

Diesel vehicle emission testing and repair programs

TMR operates a compulsory programmed inspection regime for all heavy vehicles registered in Queensland. Heavy vehicles are inspected every twelve months, prior to renewal of registration. Public passenger vehicles, such as buses, are inspected every six months.

TMR inspected 27,503 heavy vehicles while private approved inspection stations inspected a further 57,699. All the vehicles were operating on diesel fuel and included rigid heavy vehicles prime movers and buses. These inspections ensure that defective engine performance, defective exhaust and muffler problems which contribute to emissions are addressed and rectified.

In Queensland, the Brisbane City Council (BCC) owns and operates the only facility for testing diesel powered heavy vehicles under the DT80 emission testing regime. During the 2018-19 financial year BCC tested a total of 17 diesel powered vehicles, none of the vehicles tested were manufactured prior to 1996 and tested to meet fuel tax credit environmental criterion 3. Meeting the fuel tax credit through this criterion is no longer effective as an incentive to encourage maintenance of emission systems as the target vehicles are now a minimum of 25 years old and are likely to be close to retirement or already disposed of.

The remainder of vehicles were manufactured after December 1995 and complied with ADR/70 emission standards or later. All the diesel-powered vehicles tested passed. Of the 17 heavy vehicles tested, two were from BCC's own fleet and 15 were from external operators. This represents a 23% decrease on the previous year's testing numbers, again indicating that there is limited uptake of DT80 emission testing in Queensland. DT80 testing is voluntary and costs are relatively high at \$679 plus GST which may deter operators. Most of the testing this year was for kerbside garbage collection vehicles as a contractual requirement.

The National Heavy Vehicle Regulator (NHVR) is now overseeing heavy vehicle standards and has adopted a new simplified Portable Emissions Measuring system (PEMS) for testing modified heavy vehicle engines to ensure that they remain compliant with the appropriate ADR. It may be possible that this testing system could be expanded to include smoky vehicles in the future. The Queensland Police Service, Heavy Vehicle Enforcement Team has approached the BCC to investigate how to identify disabling of emissions control components. This program is in preliminary planning stages.

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 (NHVAS), administered by the NHVR. 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 need to provide a Certificate of Inspection prior to registering vehicles.

There are 39,611 Queensland registered heavy vehicles currently participating in the NHVAS maintenance scheme, representing a slight decrease on last years accredited vehicles. The vehicles are operating under 900 operators. The majority of vehicles participating in the NHVAS maintenance scheme use diesel fuel and it is anticipated that if they are well maintained they are less likely to have problematic emissions.

There are 1,086 Operators and 10,030 heavy vehicles operating under the NHVAS mass scheme which allows the vehicles to carry higher loads in exchange for being tracked to ensure drivers remain on specified routes. These vehicles are larger but make fewer trips and improve productivity, congestion and fuel efficiency.

Diesel vehicle retrofit programs

Queensland has no diesel retrofit programs at this time.

Other programs

There are no other programs currently in place in Queensland.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for Western Australia by the Hon Stephen Dawson MLC, Minister for Environment; Disability Services; Electoral Affairs for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In Western Australia, the National Environment Protection (Diesel Vehicle Emissions) Measure (Diesel NEPM) is implemented by the Department of Water and Environmental Regulation (DWER) under the *National Environment Protection Council (WA) Act 1996* and the *Western Australian Environmental Protection 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 (DoT). 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, DWER operates a remote sensing device (RSD) 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 RSD 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 (AQMP) aims to ensure that clean air is achieved and maintained throughout the Perth metropolitan region. The AQMP 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 AQMP is largely complementary to the outcomes of the Diesel NEPM.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The implementation of vehicle emissions reduction initiatives of the AQMP and the CleanRun Program is the foundation of vehicle emissions reduction strategies undertaken by the Department. DWER will continue to work with Department of Transport, government agencies and industry associations to investigate and implement motor vehicle related policies and management actions to reduce the impact of diesel vehicle emission in Western Australia.

Smoky vehicles program

In 2018-2019 the Smoky Vehicle Reporting Program (SVRP) received 482 reports, which is an average of 40 reports per month, representing a 16 per cent increase in reports from 2017-2018. The number of reports received is comparable with previous years.

There were no significant changes in the operation of the smoky vehicle reporting program for 2018-2019.

Prior to contacting the owners of reported vehicles, DWER and Department of Transport verify reports by comparing reported vehicle details against the DoT vehicle registration database, discarding reports if details "do not sufficiently match. 417 advisory letters were sent to reported vehicle owners in 2018-2019 (86 per cent valid report rate).

Table 1 summarises the responses received for vehicles reported from 1 July 2018 to 30 June 2019.

Table 1. Responses from owners of reported vehicles

Response	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
Reports received	268	455	480	415	482
Letters sent	N/A	372	424	353	417
Responses received	146	282	292	191	225
Vehicle repaired	57 (48%)	127 (45.0%)	136 (46.6%)	129 (67.5%)	142 (63.1%)
Vehicle does not smoke	45 (38%)	90 (31.9%)	96 (32.9%)	49 (25.7%)	67 (29.8%)
Can't afford to repair	1 (<1%)	3 (1.1%)	6 (2.1%)	0 (0%)	0 (0.0%)
Disposed of vehicle	3 (2%)	8 (2.8%)	16 (5.5%)	5 (2.6%)	7 (3.1%)
Wrong vehicle	6 (5%)	11 (3.9%)	19 (6.5%) ³	1 (0.5%)	1 (0.4%)
Other	8 (7%)	40 (14.2%)	19 (6.5%)	7 (3.7%)	8 (3.6%)
Petrol	35 (30%)	57 (20.2%)	49 (16.8%)	66 (20.2%)	70 (16.8%)
Diesel	71 (60%)	194 (68.8%)	208 (71.2%)	259 (79.4%)	345 (82.7%)
LPG	2 (<2%)	1 (0.4%)	0 (0%)	0 (0%)	2 (0.5%)
Fuel type not reported	13 (11%)	30 (10.6%)	35 (12.0%)	1 (0.3%)	0 (0.0%)

2018-2019 saw a continuation of the increase in vehicle owners reporting they had repaired or serviced their vehicle identified in 2017-2018. This was attributed to the fewer false positives received as a result of refinements to the reporting process at that time.

Diesel vehicles continue to represent the most significant vehicle group reported to the program.

There were 27 vehicles reported more than once in 2018-2019, nine of which were reported twice or more within 30 days. Of the vehicles reported more than once, only six vehicle owners responded to the second advisory letter sent. Five vehicles were reported three times. No response was received to the advisory letters sent to those five vehicle owners.

Annual reporting on smoky vehicle reporting is published on the DWER website, summarising program data and analysis of vehicle trends observed: <https://www.der.wa.gov.au/our-work/programs/172-smoky-vehicle-reporting-program>.

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.

Diesel vehicle emission testing and repair programs

DWER operates a portable roadside gas analyser 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 WA during 2018-2019.

Audited maintenance programs for diesel vehicles

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

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 those required under the nationally endorsed NHVAS.

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 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

There are no other programs currently run by the Western Australia government relevant to the Diesel NEPM.

South Australia

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for South Australia by Hon. David Speirs, Minister for Environment and Water, for the reporting year ended 30 June 2019.

PART 1 – IMPLEMENTATION OF THE NEPM 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.

SA 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 (DPTI) for the assessment of corrective actions. Vehicle inspectors also look for excessive smoke, missing or inoperative particulate filters and empty AdBlue tanks and order corrective action where necessary.

PART 2 – ASSESSMENT OF NEPM EFFECTIVENESS

Unlike most states, South Australia does not conduct a ‘Dob in a Smoky Vehicle’ program, where members of the public can report a smoky vehicle on-line with follow-action in the form of a letter of concern sent to the registered owner of the vehicle. In South Australia it is expected that the matter would be reported directly to the Police. There is some evidence of very occasional reports to Police, but they are reluctant to undertake a time consuming investigation without their own first hand evidence of non-compliance. There is no reporting by Police of any complaints made.

With the closure of the Regency Park Emissions Test Facility during the 2013-14 financial year due to high maintenance costs and ongoing reliability issues, there has been no means to accurately test diesel emissions in South Australia other than by visual assessment.

In the absence of effective reporting, vehicle testing and compliance mechanisms, this program has become ineffective in South Australia.

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

In 2019 the Department of Planning, Transport and Infrastructure (DPTI) introduced a new specification, *PC-ST2 Sustainability in Construction*, which includes requirements for DPTI contractors to reduce the environmental as well as community / workforce health impacts of vehicles, plant and equipment emissions. The new clause includes requirements for contractors to:

- purchase or hire mobile non-road diesel plant and equipment that complies with highest practicable EU or US EPA emissions standards (for plant over 19kW); and
- require sub-contractors to provide information on the emissions standards of the mobile non-road diesel plant and equipment they propose to use on site, and apply a weighting for air emission standards (in conjunction with other environmental considerations) in tender selection processes (for plant over 19kW)
- ensure engines are correctly repaired and regularly serviced to ensure efficiency and to prevent / minimise spills and leaks;
 - restrict unnecessary idling time of vehicles, plant and equipment;
 - improve an engine's emission performance by fitting it with an anti-pollution control device;
 - ensure fuel conforms with relevant quality standards.

DPTI is driving low emissions transition planning for the Public Transport Fleet, informed by investigations into the use of high capacity electric buses and other new forms of low emission mass transit options. DPTI will be trialling a demonstration Hybrid bus in 2020/21.

DPTI and the Department for Energy and Mining are developing an Electric Vehicle Strategy for South Australia, which will focus on setting a pathway for a transition toward Electric Vehicles that manages the impact on our energy network and maximises economic development opportunities.

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for Tasmania by Hon Peter Gutwein Minister for the Environment, Parks and Heritage for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM 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 Commonwealth 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 TasTAFE 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. Prior to 2019 the equipment was also used to check the emission outputs of LNG and CNG conversions. However, emissions testing for LNG/CNG heavy vehicle conversions are no longer undertaken as this sector of the road transport industry in Tasmania has contracted.

The diesel emissions testing equipment has not been used for commercial purposes in the current 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 NEPM EFFECTIVENESS

As of 30 June 2019 there were 14398 diesel powered heavy vehicles (that is vehicles over 4.5 tonnes) and 130306 diesel powered light vehicles registered in the State. This represents an increase of 3.2 % and an increase of 6.9 % respectively since 1 July 2018. Of the total of 633305 vehicles registered in Tasmania on 30 June 2019, 22.8 % were diesel powered.

Smoky vehicles program

The Department of State Growth maintains a strong focus on road safety and do not actively target vehicle emissions as part of light vehicle Compliance and Enforcement activities with the National Heavy Vehicle Regulator being responsible for vehicle standards applicable to all heavy vehicles. The Department does not possess diesel vehicle emission measurement facilities. However standards applicable to light and also heavy vehicles include “*the vehicle must not emit visible emissions for a continuous period of at least 10 seconds*” also known as the ten second rule. When issued a Defect Notice and/or Traffic Infringement Notices by Authorised Officers, remedial action and subsequent inspection by an Approved Vehicle Examiner is required to enable the defective vehicle status to be cleared from the registry.

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 specific to diesel vehicle emissions in Tasmania, however the National Heavy Vehicle Regulator now administer the National Heavy Vehicle Accreditation Scheme (previously performed individually by jurisdictions). Heavy vehicle Maintenance Management Accreditation is one module within this scheme that encourages heavy vehicle operators to take more responsibility for maintaining their vehicles correctly and ensuring that they are always in good mechanical condition, compliant with relevant vehicle standards and operating efficiently. Fuel quality and fault repair activity standards apply in this module. Scheduled compliance audits and triggered audits are requirements of this accreditation.

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 2019.

PART 1 — IMPLEMENTATION OF THE NEPM 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. Therefore, 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 26 Euro VI buses in 2018-19. A total of 132 Euro VI buses have been delivered as at June 30, 2019. A fleet of 70 CNG powered buses, purchased between 2004 and 2008, also remains in service

PART 2 — ASSESSMENT OF NEPM 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 the Northern Territory by the Hon Eva Lawler, Minister for Environment and Natural Resources for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM 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 NEPM EFFECTIVENESS

A number of initiatives have been implemented to control diesel vehicle emissions in the Northern Territory. Vehicle standards are enforced through the general provisions of the *Northern Territory Motor Vehicles Act 1949* and the Motor Vehicles (Standards) Regulations - Australian Vehicle Standard Rules which require all vehicles to comply with Australian Design Rules when in service.

In the Northern Territory, there are approximately 66 000 diesel vehicles registered, representing around 41 per cent of the total vehicle fleet, which is much higher than the national proportion of diesel vehicles in the vehicle fleet (approximately 25 per cent). Australian Bureau of Statistics data indicate that diesel vehicles registered in the Northern Territory represent approximately 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 Territory are registered in the Darwin region, with 15 per cent in Alice Springs, 9 per cent in Katherine and 2 per cent in Tennant Creek.

In the Darwin region, approximately 38 per cent of all registered vehicles are diesels, which is lower than in Alice Springs where diesels represent 42 per cent of the total vehicle fleet. In Katherine and Tennant Creek the diesel portion of the total fleet is 58 per cent and 60 per cent respectively, indicating a higher reliance on diesel vehicles in remote areas.

Of the heavy vehicle diesels registered in the Northern Territory, 61 per cent are registered in the Darwin region, 20 per cent in Alice Springs and 11 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 Territory's vehicle registration and roadworthiness testing procedures. Records of diesel vehicles issued with defect orders show that only a small number 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. Therefore, the current air quality conditions are not considered a trigger for change in relation to managing diesel emissions in the Territory. 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 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 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. In addition the Territory's innovative vehicle policy 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 Commonwealth by the Department of Agriculture, Water and Environment for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Commonwealth supports the Controlled Waste NEPM through our hazardous waste reform activities.

Key activities related to tracking and understanding Australia's interstate movements of hazardous and controlled waste included:

- Analysis linking Australian waste trade and waste movement data to inform compliance and enforcement activities.
- Working with the states, territories and industry to deliver the National Action Plan's commitment to implement agreed national waste data, reporting and information-sharing improvements by 2022.
- Publishing the Hazardous Waste in Australia 2019 report. This major report, produced every two years, provides data and analysis on the sources, flows, management and fate of hazardous wastes. This includes analysis of data sourced from waste tracking systems, and recommendations for how this data may be improved.
- Publishing the third edition of our national standard on hazardous waste data and reporting.

For more information, see www.environment.gov.au/protection/hazardous-waste/reform.

PART 2 — ASSESSMENT OF NEPM 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. Matt Kean MP, Minister for Energy and Environment, for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The NEPM has been in place for more than ten years and while operating relatively smoothly, several significant issues have arisen (see discussion under Part 2 below). Minor changes to the NEPM recommended during the ten-year review were implemented in NSW in October 2014 under the Protection of the Environment Operations (Waste) Regulation 2014.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

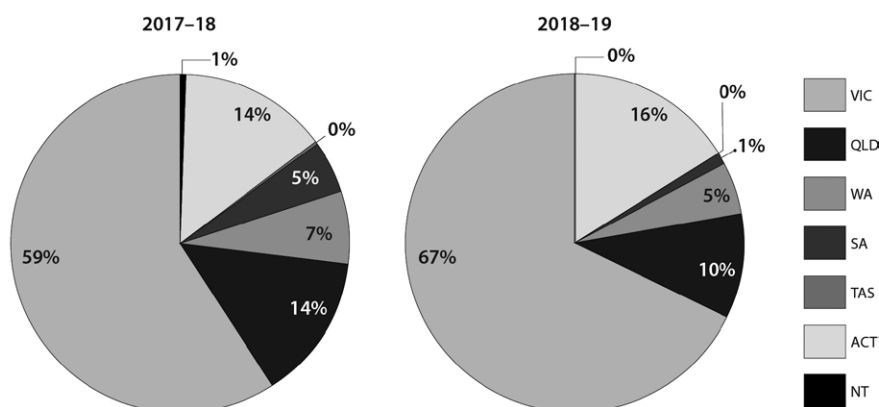
Overview

The NEPM continues to be an important tool in minimising the potential for adverse impacts from the movement of controlled waste on the environment and human health. However, inconsistencies between jurisdictions (e.g. in terms of waste classification, waste codes, terminology) and outdated waste tracking systems introduce significant data uncertainty. This leads to limited oversight and potentially unlawful practices, which distort the waste management market and may have significant adverse impacts on people and the environment, if undetected.

A total of 66,046 tonnes of controlled waste in 4,631 movements were reported in 2018-19 as having been transported into NSW from interstate (Tables 2 and 4). This is a 7% decrease on the 70,788 tonnes and a decrease on the 4,832 waste movements into NSW in 2017-18. This compares to the reported 0.5% increase in controlled waste tonnage and the minor increase in waste movements from 2016-17 to 2017-18.

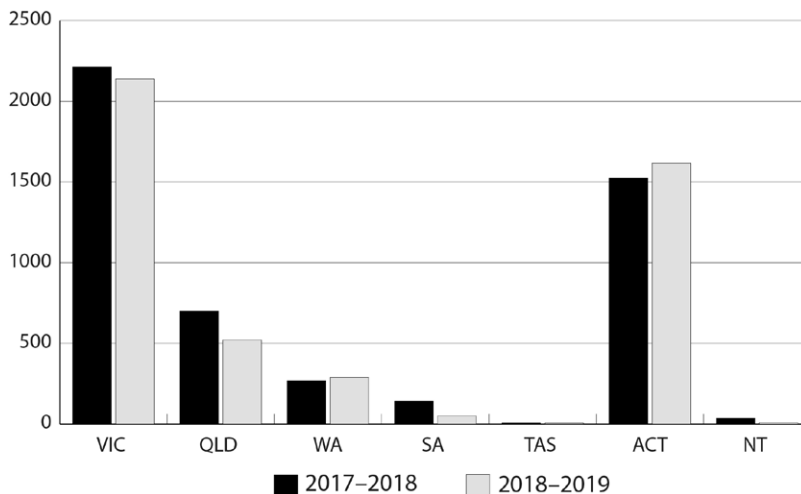
NSW received less waste in 2018-19 compared to 2017-18 from all states except Victoria and the ACT. The greatest decrease was from Queensland followed by South Australia and Western Australia. Victoria had the largest increase on volume (2,147 tonnes) increasing its share of waste into NSW from 59% in 2017-18 to 67% in 2018-19 (Figures 1 and 2). The contribution of waste into NSW from both Queensland and South Australia decreased.

Figures 1 and 2 – Waste Contribution from States and Territories into NSW



During the reporting period there were 201 fewer movements into NSW than during the 2017-18 period with Queensland accounting for the largest decrease of 179 movements while ACT had the largest increase of 92 movements (Figure 3).

Figure 3 – Waste Movements by Transport Certificate Totals (single waste TCs)



Highlights by jurisdiction include:

- **Victoria:** while the last reporting period saw the transport of alkalis increase significantly, during this reporting period there was a drop of this waste type from 347 tonnes down to just 6 tonnes. Soil/sludge waste dropped by 71%. Organic solvent waste almost doubled from 125 tonnes to 218 tonnes.
- **Queensland:** while the last reporting period saw the transport of plating and heat treatment waste drop to zero, it has increased to 4.1 tonnes during this period. Clinical and pharmaceutical waste increased from previously zero to 195 tonnes while organic solvents, pesticides, oils and soil/sludge all decreased (most significantly soil/sludge which decreased by 940 tonnes for the period).
- **Western Australia:** total movement volume was down for this state while the number of movements increased by 21 tonnes for the period with organic solvents again decreasing (by 19 tonnes). There were also decreases in alkalis (down to zero), oils and most significantly soil/sludge which decreased from 160 tonnes to 61 tonnes. Acid movements were the only increased waste type from WA.
- **South Australia:** with a significant drop in total volume waste movement (by 2,286 tonnes) the only waste type to increase in volume was organic solvent (only slightly). Paints, resins, inks, organic sludges and acids both decreased to zero tonnes while there was a 60% drop in inorganic chemicals.
- **Tasmania:** transport of oils remained relatively steady after an increase reported in the last period; however alkalis, inorganic chemicals and pesticides all decreased to zero for this period. Paints, resins, inks, organic sludges accounted for the highest increase (up from zero to 16.5 tonnes).
- **ACT:** there was a reported increase in transport of soil/sludge in the last reporting period of 745 tonnes, however this reporting period saw a decrease of 777 tonnes. There was a large increase in inorganic chemicals transport from 24 tonnes to 446 tonnes (making it the third highest waste type for the ACT by volume this period).
- **Northern Territory:** the total transported volume decreased this year by 541 tonnes, mostly due to a decrease in the transport of soil/sludge from 302 tonnes to 2 tonnes.

Highlights by waste type include:

- **Acids:** the total volume share of this waste type increased by 4% from 2017-18 up to 33% with Victoria, Queensland, Western Australia and Northern Territory all recording increases in volume.
- **Inorganic chemicals:** the total volume share of this waste type increased by 4% from 2017-18 up to 41% with Victoria and the ACT accounting for this increase. This waste type includes lead acid batteries and mercury.
- **Soil/sludge:** the total volume share of this waste type decreased by 6% from 2017-18 down to 2% with all states/territories recording decreases in waste volume (Tasmania remained consistent from last reporting period with zero). This waste type includes contaminated soils, asbestos and fire washwaters.

Detailed results

NOTES: the data contains some discrepancies due to the nature of the online system and cannot be relied upon to be completely correct. Data in this part has been rounded to the nearest whole number.

Table 1: Number of consignment authorisations issued by NSW

Reporting Year	Consignment authorisations issued
2017–18	10,806
2018–19	9,865

Table 2: Quantity of controlled waste into NSW for the period 1 July 2018 to 30 June 2019—Tonnes per waste category by state/territory

Code	Description	State/territory (tonnes)								Total
		NSW	Vic	Qld	WA	SA	Tas	ACT	NT	
A	Plating and heat treatment	N/A	2.59	4.1	0.00	0.00	0.00	0.49	0.00	7.18
B	Acids	N/A	21685.16	18.32	4.69	0.00	0.00	0.35	1.20	21709.72
C	Alkalies	N/A	6.02	8.19	0.00	0.00	0.00	0.18	3.29	17.68
D	Inorganic chemicals	N/A	16599.11	5402.32	3421.33	915.48	0.000	446.45	38.48	26823.17
E	Reactive chemicals	N/A	3.36	0.27	0.00	0.00	0.000	0.28	0.00	3.91
F	Paints, resins, inks, organic sludges	N/A	1227.14	233.89	0.00	0.00	16.5	67.02	0.00	1544.55
G	Organic solvents	N/A	218.09	65.57	0.93	23.24	0.00	17	0.00	324.83
H	Pesticides	N/A	0.84	6.87	0.00	0.00	0.00	0.64	0.00	8.35
J	Oils	N/A	1503.31	139.88	61.14	26.64	71.56	3359.32	6.35	5168.20
K	Putrescible/organic wastes	N/A	1656.82	0.86	0.00	0.00	0.00	5822.22	0.00	7479.90
L	Industrial washwater	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M	Organic chemicals	N/A	101.42	526.26	6.63	0.00	5.06	33.3	0.00	672.67
N	Soil/sludge	N/A	783.37	220.73	3.08	8.59	0.00	128.78	1.82	1146.37
R	Clinical and Pharmaceutical	N/A	1.54	195.42	0.00	0.00	0.00	294.76	0.00	491.72
T	Misc	N/A	328.89	107.44	1.96	0.00	0.00	210.53	0.00	648.82
TOTAL		N/A	44117.66	6930.12	3499.76	972.95	93.12	10381.32	51.14	66046.07

Table 3: Discrepancies in movements of controlled waste into NSW for the period 1 July 2018 to 30 June 2019—percentage of total movements

Discrepancy Type	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
Transport without authorisation	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
Waste data	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 NSW for the period 1 July 2018 to 30 June 2019

Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*	Total
2140	521	289	50	6	1617	8	0	4631

* 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 2019.

PART 1—IMPLEMENTATION OF THE NEPM 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 consultation between the state and territory agencies, via an Implementation Working Group established under the NEPM agreement.

The Implementation Working Group is proposing to strengthen and harmonise the regulation and tracking of controlled waste movements in Australia, work being led by EPA NSW. EPA Victoria is in active discussions with EPA NSW.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

In the 2018-19 reporting period, Victoria issued 639 authorisations to move waste to another state or territory. This is an increase of 53% approvals from the previous year. Most authorisations were for solvents sent to resource recovery, and PFAS and clinical waste sent to treatment. EPA Victoria also reviewed the administration procedures for authorisation assessments. As of the 1 July 2019, authorisations have been altered so that only one waste code can be listed in each authorisation.

The total amount of controlled waste that was brought into Victoria during the reporting year was 53,465 tonnes. This was an increase of 14,079 tonnes from the amount reported in 2017-18.

Inorganic chemicals remain the largest percentage of the total tonnage transported to Victoria in 2018-19. The inorganic chemicals waste stream, consisting of metallic constituents, accounted for 35% of the total volume in 2018-19.

Due to the continuing implementation of EPA's new integrated information management system, the data for discrepancies in movements of controlled waste into Victoria in 2018-19 (refer to table 3 below) remains unavailable at the time of reporting. EPA is on track for these to be available for 20/21 reporting.

In 2018-2019, EPA Victoria focused on the phasing out of carbon copy paper waste transport certificates used to track waste within Victoria and from 1 July 2019 mandated the use of the existing electronic waste transport certificate system. Interstate movement of waste is still conducted with paper certificates. EPA Victoria also focused on designing new subordinate legislation and a new waste tracking electronic solution, both of which will come into effect to align with commencement of Victoria's new environmental protection laws. This subordinate legislation has been designed to be better aligned to the NEPM waste codes. It is proposed that the new waste tracking electronic solution will include the movement of controlled waste into and out of Victoria. Victoria will continue to work with our counterparts in other states.

Table 1: Number of consignment authorisations issued by Victoria

Reporting Year	Consignment authorisations issued
2017-18	416
2018-19	639

Table 2: Quantity of controlled waste into Victoria for the period 1 July 2018 to 30 June 2019—tonnes per waste category by State/Territory

Waste type		QTY (TONNE)									
		NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total	Percent (%)
A	Plating & heat treatment	0	N/A	0	0	0	0	0	0	0	0
B	Acids	264	N/A	3	6	151	0	0	21	445	1
C	Alkalis	285	N/A		0	0	0	0	922	1207	2
D	Inorganic chemicals	2,645	N/A	73	13231	1336	1315	0	0	18600	35
E	Reactive chemicals	5	N/A				0	0	0	5	0
F	Paints, resins, inks, organic sludges	2,688	N/A	1,213	20	621	55	0	25	4622	9
G	Organic solvents	929	N/A	284	103	175	96	0	0	1587	3
H	Pesticides	68	N/A	59	360	13	0	0	0	500	1
J	Oils	1,275	N/A	199	12	67	44	0	83	1680	3
K	Putrescible/organic waste	1,316	N/A	20	37	0	0	0	0	1373	3
L	Industrial washwater	2,808	N/A	105	0	690	96	0	425	4124	8
M	Organic chemicals	678	N/A	1,022	0	494	50	0	187	2431	5
N	Soil/sludge	7,471	N/A	153	7	116	53	0	73	7873	15
R	Clinical/pharmaceutical	528	N/A	62	253	337	7	0	12	1199	2
T	Misc.	5,672	N/A	0	0	2130	6	0	11	7819	15
TOTAL									53465	100	

Table 3: Discrepancies in movements of controlled waste into Victoria for the period 1 July 2018 to 30 June 2019—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

Table 4: Number of movements of controlled waste into Victoria for the period 1 July 2018 to 30 June 2019

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
2212	N/A	299	642	670	175	0	118	0

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 Hon. Leeanne Enoch MP, Minister for Environment and the Great Barrier Reef, Minister for Science, and Minister for the Arts for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Queensland Department of Environment and Science (DES) 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 2008* (EP Reg)⁴. 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 EP Act and detailed in Schedule 2 of the EP Reg. The NEPM administration is integrated with intrastate tracking, controlled waste licensing and compliance activities in Queensland.

- DES 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 2018/19 was 446, which is a 9.6% increase from 2017/18 (406).
- Processing of transport records was continuing at the time of reporting. Records processed to date indicate a small increase in the amount of controlled waste transported into Queensland from other Australian States and Territories.
- During 2018/19, the department's compliance efforts were focused on key departmental investigations and ensuring movement data for specific waste types was verified.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by Queensland

Reporting Year	Consignment authorisations issued
2017–18	406
2018–19	446

⁴ As of 1 September 2019, the waste tracking provisions are contained within Part 9 of the *Environmental Protection Regulation 2019*.

Table 2: Quantity of controlled waste into Queensland for the period 1 July 2018 to 30 June 2019—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	310.54	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	310.54
B	Acids	177.08	0.00	N/A	0.00	0.00	0.00	0.00	6.00	0.00	183.08
C	Alkalis	286.72	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	286.72
D	Inorganic chemicals	4704.21	18.00	N/A	0.00	0.00	0.00	0.00	0.11	0.00	4722.32
E	Reactive chemicals	0.00	6.13	N/A	0.00	0.00	0.00	0.00	0.00	0.00	6.13
F	Paints, resins, inks organic sludges	755.85	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	755.85
G	Organic solvents	179.30	90.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	269.30
H	Pesticides	1554.62	379.15	N/A	0.00	10.90	0.00	0.00	0.00	0.00	1944.67
J	Oils	31896.25	47.74	N/A	0.00	0.00	0.00	0.00	2428.28	0.00	34372.27
K	Putrescible/organic waste	11000.54	0.00	N/A	0.00	90.00	0.00	0.00	0.00	0.00	11090.54
L	Industrial washwater	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M	Organic chemicals	133.76	872.16	N/A	0.00	0.46	0.00	0.00	19.60	0.00	1025.98
N	Soil/sludge	43133.95	6.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	43139.95
R	Clinical & pharmaceutical	1823.37	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	1823.37
T	Misc.	13666.09	17.94	N/A	0.00	0.00	0.00	0.00	41.77	0.00	13725.80
State Totals (tonnes)		109622.28	1437.12	N/A	0.00	101.36	0.00	0.00	2495.76	0.00	113656.52

Under the Queensland column in tables 2, 3 & 4, N/A stands for “not applicable”, because the tables are for the interstate movement of waste into the state not Intrastate movements.

Table 3: Discrepancies in movements of controlled waste into Queensland for the period 1 July 2018 to 30 June 2019—percentage of total movements

*Discrepancy Type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr
Consignment non-arrival	0%	0%	N/A	0%	0%	0%	0%	0%	0%
Transport without authorisation	0%	0%	N/A	0%	0%	0%	0%	0%	0%
Non-matching documentation	0%	0%	N/A	0%	0%	0%	0%	0%	0%
Waste data	0%	0%	N/A	0%	0%	0%	0%	0%	0%

Table 4: Number of movements of controlled waste into Queensland for the period 1 July 2018 to 30 June 2019

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
6,669	83	N/A	0	6	0	0	73	0

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. Stephen Dawson MLC, Minister for Environment; Disability Services; Electoral Affairs for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Department of Water and Environmental Regulation is responsible for administering the implementation of the *National Environment Protection (Movement of Controlled Waste between States and Territories) Measure*, under the *National Environment Protection Council (WA) Act 1996* and the *Environmental Protection Act 1986*, in Western Australia.

The provisions of the *Environmental Protection (Controlled Waste) Regulations 2004* provide for the licensing of carriers, drivers, vehicles and/or tanks, and the use of controlled waste tracking forms to ensure controlled waste is transported to an appropriate waste facility.

Western Australia is carrying out a review of the *Environmental Protection (Controlled Waste) Regulations 2004* (the Regulations) to ensure the Regulations are risk-based, streamlined and effective.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by Western Australia

Reporting Year	Consignment authorisations issued
2017–18	6
2018–19	12

Table 2: Quantity of controlled waste into Western Australia for the period 1 July 2018 to 30 June 2019—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	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
B	Acids	0.00	0.00	0.00	N/A	0.00	0.00	0.00	31.00	0.00	31.00
C	Alkalies	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
D	Inorganic chemicals	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
E	Reactive chemicals	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
F	paints, resins, inks organic sludges	0.00	0.00	0.00	N/A	0.00	0.00	0.00	39.34	0.00	39.34
G	Organic solvents	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
H	Pesticides	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
J	Oils	0.00	0.00	0.00	N/A	0.00	0.00	0.00	282.32	0.00	282.32
K	Putrescible / organic waste	0.00	0.00	0.00	N/A	0.00	0.00	0.00	37.19	0.00	37.19
L	Industrial washwater	0.00	0.00	0.00	N/A	0.00	0.00	0.00	1206.00	0.00	1206.00
M	Organic chemicals	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
N	Soil / sludge	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
R	Clinical & pharmaceutical	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
T	Misc.	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
State Totals (tonnes)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	1595.85	0.00	1595.85

Table 3: Discrepancies in movements of controlled waste into Western Australia for the period 1 July 2018 to 30 June 2019—percentage of total movements

Discrepancy Type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr *
Consignment non-arrival	0%	0%	0%	N/A	0%	0%	0%	0%	0%
Transport without authorisation	0%	0%	0%	N/A	0%	0%	0%	0%	0%
Non-matching documentation	0%	0%	0%	N/A	0%	0%	0%	0%	0%
Waste data	0%	0%	0%	N/A	0%	0%	0%	0%	0%

N/A = not available/applicable

Table 4: Number of movements of controlled waste into Western Australia for the period 1 July 2018 to 30 June 2019

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
0	0	0	N/A	0	0	0	71	0

N/A = not available/applicable

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 Hon. David Speirs, Minister for Environment and Water, for the reporting year ended 30 June 2019.

PART 1 – IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The NEPM obligations are administered by the *Environment Protection (Movement of Controlled Waste) Policy 2014* under the *Environment Protection Act 1993*.

In 2018 -2019, South Australia as chair of the Controlled Waste NEPM Implementation Working Group continued to pursue consistency with other jurisdictions in the national tracking of controlled waste in a manner to underpin the desired environmental outcomes of the Measure.

No implementation issues were reported during 2018-19.

PART 2 – ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by South Australia

Reporting Year	Consignment authorisations issued
2017–18	159
2018–19	223

Table 2: Quantity of controlled waste into South Australia for the period 1 July 2018 to 30 June 2019—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	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00
B	Acids	0.22	0.00	0.00	19.50	N/A	0.00	0.00	39.02	0.00	58.74
C	Alkalies	0.00	3.59	0.00	0.00	N/A	0.00	0.00	21.00	0.00	24.59
D	Inorganic chemicals	9068.60	8435.83	0.00	44.50	N/A	330921.83	0.00	293.52	0.00	348764.28
E	Reactive chemicals	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00
F	Paints, resins, inks organic sludges	0.00	97.61	0.00	0.00	N/A	0.00	0.00	106.05	0.00	203.66
G	Organic solvents	75.14	26.08	0.00	0.00	N/A	0.00	0.00	2.00	0.00	103.22
H	Pesticides	19.58	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	19.58
J	Oils	438.82	339.13	68.00	119.68	N/A	0.00	0.00	2334.50	0.00	3300.13
K	Putrescible/organic waste	0.00	0.00	0.00	0.00	N/A	0.00	0.00	11.00	0.00	11.00
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	0.00	4.31	0.00	0.00	N/A	0.00	0.00	5.00	0.00	9.31
N	Soil/sludge	6015.40	4590.18	0.00	283.54	N/A	0.00	0.00	360.68	0.00	11249.80
R	Clinical & pharmaceutical	0.00	32.38	0.00	0.00	N/A	23.75	0.00	82.94	0.00	139.07
T	Misc.	260.89	0.00	0.00	0.00	N/A	0.00	0.00	346.71	0.00	607.60
State Totals (tonnes)		15878.65	13529.11	68.00	467.22	0.00	330945.58	0.00	3602.42	0.00	364490.98

Table 3: Discrepancies in movements of controlled waste into South Australia for the period 1 July 2018 to 30 June 2019—percentage of total movements

Discrepancy Type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr *
Consignment non-arrival	53%	27%	83%	88%	N/A	25%	100%	80%	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%

Table 4: Number of movements of controlled waste into South Australia for the period 1 July 2018 to 30 June 2019

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
525	487	4	20	N/A	76	0	275	0

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. Peter Gutwein MP, Minister for the Environment, for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM 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*.

Tasmania consults with Australian jurisdictions on NEPM matters such as consignment authorisations and the appropriateness of treatment/disposal proposals.

Tasmania receives controlled waste from Antarctica. Waste received from Antarctica is reported under External Territories in the Tables below.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by Tasmania

Reporting Year	Consignment authorisations issued
2017–18	30
2018–19	27

Table 2: Quantity of controlled waste into Tasmania for the period 1 July 2018 to 30 June 2019—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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B	Acids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00	6.00
C	Alkalies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20
D	Inorganic chemicals	13.20	3892.03	0.00	0.00	0.00	0.00	0.00	0.00	1.60	3906.83
E	Reactive chemicals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20
F	Paints, resins, inks organic sludges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00
G	Organic solvents	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00	30.00
H	Pesticides	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J	Oils	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.00	65.00
K	Putrescible/organic waste	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.00	92.00
L	Industrial washwater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M	Organic chemicals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.15
N	Soil/sludge	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.50	49.50
R	Clinical & pharmaceutical	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.80
T	Misc.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80	1.80
State Totals (tonnes)		13.20	3892.03	0.00	0.00	0.00	0.00	0.00	0.00	249.25	4154.48

Table 3: Discrepancies in movements of controlled waste into Tasmania for the period 1 July 2018 to 30 June 2019—percentage of total movements

Discrepancy Type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr *
Consignment non-arrival	0%	0%	0%	0	0%	N/A	0%	0%	0%
Transport without authorisation	0%	0%	0%	0%	0%	N/A	0%	0%	0%
Non-matching documentation	0%	0%	0%	0%	0%	N/A	0%	0%	0%
Waste data	0%	0%	0%	0%	0%	N/A	0%	0%	0%

Table 4: Number of movements of controlled waste into Tasmania for the period 1 July 2018 to 30 June 2019

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
1	223	0	0	0	0	0	0	26

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 ACT by Environment Protection Authority for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM 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 Planning and Sustainable Development 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* and *Environment Protection Regulation 2005*.

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.

Movements have continued into the ACT from most jurisdictions for the treatment of polychlorinated biphenyl free contaminated oil by Ampcontrol Services (NSW) Pty Ltd and from the surrounding New South Wales regions for the treatment of clinical waste by Daniels Health Services Pty Ltd.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by the Australian Capital Territory

Reporting Year	Consignment authorisations issued
2017–18	49
2018–19	57

Table 2: Quantity of controlled waste into the Australian Capital Territory for the period 1 July 2018 to 30 June 2019—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	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00
B	Acids	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00
C	Alkalies	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00
D	Inorganic chemicals	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00
E	Reactive chemicals	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00
F	Paints, resins, inks organic sludges	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00
G	Organic solvents	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00
H	Pesticides	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00
J	Oils	262.35	45.00	30.30	0.00	0.00	0.00	N/A	0.00	0.00	337.65
K	Putrescible/organic waste	12.50	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	12.50
L	Industrial washwater	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00
M	Organic chemicals	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00
N	Soil/sludge	81.59	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	81.59
R	Clinical & pharmaceutical	242.63	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	242.63
T	Misc.	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00
State Totals (tonnes)		599.07	45.00	30.30	0.00	0.00	0.00	N/A	0.00	0.00	674.37

Table 3: Discrepancies in movements of controlled waste into the Australian Capital Territory for the period 1 July 2018 to 30 June 2019—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%	N/A	0%	0%
Transport without authorisation	0%	0%	0%	0%	0%	0%	N/A	0%	0%
Non-matching documentation	0%	0%	0%	0%	0%	0%	N/A	0%	0%
Waste data	0%	0%	0%	0%	0%	0%	N/A	0%	0%

Table 4: Number of movements of controlled waste into the Australian Capital Territory for the period 1 July 2018 to 30 June 2019

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
764	4	2	0	0	0	0	0	0

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 Eva Lawler MLA, Minister for Environment and Natural Resources for the reporting year ended 30 June 2019.

PART 1 – IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Northern Territory *Waste Management and Pollution Control Act 1998* 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 (NT EPA) 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 Northern Territory by the NT WorkSafe administration of the *Transport of Dangerous Goods by Road and Rail (National Uniform Legislation) Act 2010*.

The movement and volume of controlled waste into the Northern Territory will increase significantly should the proposed development of an underground waste storage facility south of Alice Springs proceed.

PART 2 – ASSESSMENT OF NEPM EFFECTIVENESS

Movement of controlled waste currently tends to be from the NT to other states. The NEPM provides a consistent system for use in the Northern Territory when required and the Northern Territory has implemented a paper-based system for Consignment Authorisations and Waste Tracking Certificates. The Northern Territory is exploring options for an electronic system to facilitate more efficient waste tracking under the NEPM. Discrepancies in movements of controlled waste into the Territory for the period relate entirely to errors in completing the paper-based waste transport certificates.

Table 1: Number of consignment authorisations issued by Northern Territory

Reporting Year	Consignment authorisations issued
2017–18	5
2018–19	10

Table 2: Quantity of controlled waste into Northern Territory for the period 1 July 2018 to 30 June 2019—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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
B	Acids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
C	Alkalies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
D	Inorganic chemicals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
E	Reactive chemicals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
F	Paints, resins, inks organic sludges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
G	Organic solvents	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
H	Pesticides	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
J	Oils	0.00	0.00	125.84	292.00	0.00	0.00	0.00	N/A	0.00	417.84
K	Putrescible/organic waste	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
L	Industrial washwater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
M	Organic chemicals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
N	Soil/sludge	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
R	Clinical & pharmaceutical	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
T	Misc.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00
State Totals (tonnes)		0.00	0.00	125.84	292.00	0.00	0.00	0.00	0.00	0.00	417.84

Table 3: Discrepancies in movements of controlled waste into Northern Territory for the period 1 July 2018 to 30 June 2019—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%	N/A	0%
Transport without authorisation	0%	0%	0%	0%	0%	0%	0%	N/A	0%
Non-matching documentation	0%	0%	0%	0%	0%	0%	0%	N/A	0%
Waste data	0%	0%	0%	100	0%	0%	0%	N/A	0%

Table 4: Number of movements of controlled waste into Northern Territory for the period 1 July 2018 to 30 June 2019

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
0	0	9	3	0	0	0	N/A	0

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 Sussan Ley MP, Minister for the Environment, for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

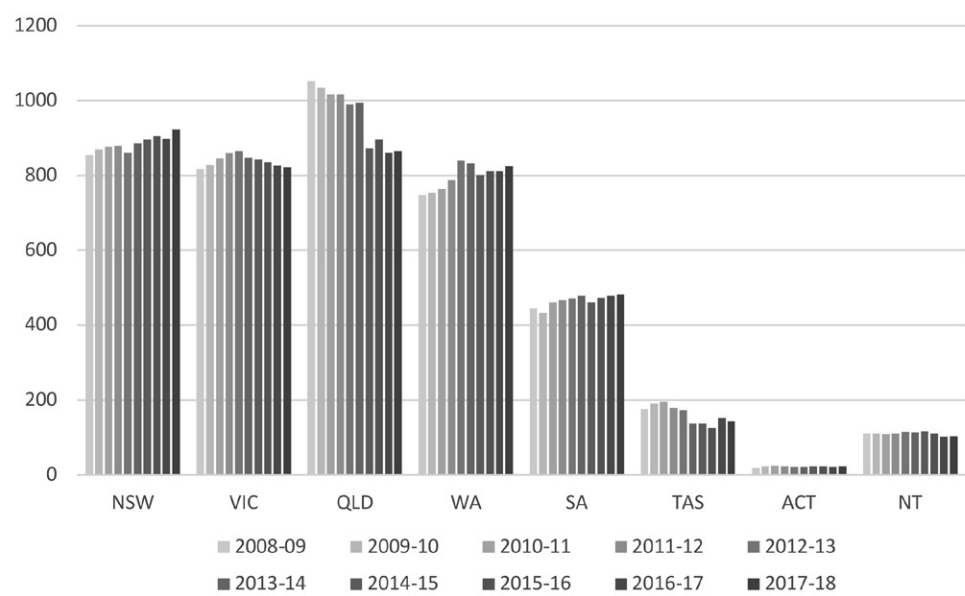
- The Commonwealth implements the NEPM administratively and ensures that its obligations under the *National Environment Protection Act 1994* and *National Environment Protection Measures (Implementation) Act 1998* are met.
- On 29 March 2019, the Department of the Environment and Energy published National Pollutant Inventory (NPI) data for 2017–18. This data details emissions from over 4000 industry facilities and represents the 20th year of NPI publication of emissions from industry.
- Of the datasets published by the Department on data.gov.au, 3717 views of NPI data were logged, making it the most frequently viewed dataset.
- The Commonwealth fielded enquiries from industry in relation to reporting, chaired and provided secretariat support for the NPI Review Steering Committee, as well as provided secretariat support for the NPI Intergovernmental Working Group, which oversees key NPI administration activities.
- The Commonwealth managed work on the review of the NPI. This work included:
 - Chairing and providing secretariat support for two meetings of the NPI Review Steering Committee, comprising senior officials from the states and territories, to provide oversight and direction for the review process
 - Chairing and providing secretariat support for one meeting of the NPI Intergovernmental Working Group (IWG) to support delivery of the review
 - Publishing a discussion paper to inform a public consultation process
 - Publishing submissions to the review
 - Submitting an interim review report to the NEPC Committee
 - The Commonwealth acknowledges the valuable contribution of states and territories towards the Review.
- The Commonwealth redesigned the NPI homepage to increase usability and provide a direct link to NPI facility locations on the National Map (see <http://www.npi.gov.au/>).

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

The Commonwealth published the 2017–18 National Pollutant Inventory (NPI) on 29 March 2019. The number of facilities reporting to the NPI rose from 4162 in 2016–17 to 4187 in 2017–18.

Figure 1 below shows the number of facilities reporting to the NPI in each jurisdiction over the past 10 years.

Figure 1: Number of reporting facilities in each jurisdiction by year since 2008-09



The Commonwealth continued to work cooperatively with all jurisdictions to administer the NPI NEPM and support the online reporting system to ensure reliable collection of industry data.

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Public		
<ul style="list-style-type: none"> • 361,202 sessions on the NPI website • 3717 views of the NPI dataset on data.gov.au 	<ul style="list-style-type: none"> • The number of user sessions increased from 306,703 in the previous year. • Software errors in the NPI database frequently affected public users who searched on the data. 	<ul style="list-style-type: none"> • 65 calls were received by the Commonwealth through the free call phone line. This was 5 fewer calls than the previous year. Most of these calls were industry requests for help with NPI reporting and most industry calls were referred to the relevant state or territory NPI team. • 175 messages were sent in response to emails received in the NPI inbox. This was 22 more messages than the previous year.
Industry		
<ul style="list-style-type: none"> • 4187 reports for 2017–18 • 4162 reports for 2016–17 • 101 new reporters • No new sectors reporting • No confidentiality claims submitted 	<ul style="list-style-type: none"> • Industry reported some compatibility and usability problems with the NPI calculation tools. 	<ul style="list-style-type: none"> • The Commonwealth helped industry reporters with advice on first point of contact for assistance (i.e. state and territory National Pollutant Inventory teams) and for support with reporting systems managed by the Commonwealth.
Government		
<ul style="list-style-type: none"> • 8 facilities from 3 different Commonwealth departments reported to the NPI in 2017–18 	<p>The Department of the Environment and Energy used NPI data in the following way:</p> <ul style="list-style-type: none"> • to inform Australia's ratification of the United Nations Minamata Convention on Mercury. Reported data relating to emissions and releases of mercury were used to assess anthropogenic sources of mercury in Australia. • for the first time, to update and expand emissions data for short-lived climate forcers (atmospheric compounds that affect air quality and the climate) in the National Greenhouse Accounts. NPI data contributed to the Australian Government's national greenhouse gas reporting on emissions of black carbon, particulate matter $\leq 2.5 \mu\text{m}$ ($\text{PM}_{2.5}$), particulate matter $\leq 10 \mu\text{m}$ (PM_{10}), and sulfur dioxide. • in the 4th National Report under the Stockholm Convention on Persistent Organic Pollutants. • in the environmental risk assessments of medium-chain chlorinated paraffins conducted for the National Industrial Chemicals Notification and Assessment Scheme (NICNAS). 	<ul style="list-style-type: none"> • The Commonwealth chaired and provided secretariat support for the NPI Review Steering Committee, which oversees the review of the NPI. • The Commonwealth chaired and provided secretariat support for the NPI Intergovernmental Working Group, which oversees key NPI administration activities.

1 - Commonwealth to provide

2 - Jurisdictions to provide

3 - States and Territories to provide

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. Matt Kean MP, Minister for Energy and Environment, for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The New South Wales Environment Protection Authority (EPA)⁵ implemented 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 NEPM EFFECTIVENESS

National Pollutant Inventory (NPI) facility emissions and transfers are reported for the 2017-18 reporting period as NPI annual reporting period data is not finalised until public release by the Commonwealth at end March of the subsequent calendar year. The EPA conducts online and face-to-face training as required, which assists facility reporters with understanding key elements of NPI reporting, using the online reporting system and applying calculation and validation tools rather than emission estimation technique manuals (to reduce time and improve accuracy).

The NPI 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 with guidance on transfer destinations
- emission factors for non-standard fuels such as landfill gas burnt in flares or engines
- improved fugitive emission estimation methods
- an interactive on-line training program
- regular review of the NPI to scope improvements in its performance and administration.

There were 29 new reporters in 2017-18. The EPA undertook industry sector reviews to identify facilities that may be required to report data to the NPI. Generally, these industry sector reviews include facilities that currently hold an environment protection licence issued under the *Protection of the Environment Operations Act 1997*.

⁵ Following machinery of government changes in early 2019, the NPI is now administered in NSW by the Department of Planning, Industry and Environment.

Summary of 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"> Academics and researchers continue to use the NPI data for modelling and other studies. The media utilises NPI data where they identify environmental issues of concern. <p>Some issues have been identified:</p> <ul style="list-style-type: none"> Community users of NPI 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 additional contextual information. 	<ul style="list-style-type: none"> N/A
Industry		
<ul style="list-style-type: none"> 923 reports for 2017-18 (compared to 900 reports for 2016-17) 29 new reporters in 2017-18 Nil confidentiality claims submitted 	<ul style="list-style-type: none"> Training and support provided by the EPA to facility reporters has improved data quality and reduced costs to NPI facility reporters. 	<ul style="list-style-type: none"> During 2017-18, the EPA trained approximately 30 reporters, including in use of the NPI online reporting system. The EPA has received ongoing requests from industry for training and guidance material on transfers of NPI substances in waste streams.
Government		
<ul style="list-style-type: none"> 923 desktop audits Nil on-site audits Nil regulatory actions 	<ul style="list-style-type: none"> The EPA continues to use the NPI to inform policy and regulatory approaches. The EPA continues to use the NPI to analyse environmental outcomes in relation to the regulation of substances at industrial facilities. 	<ul style="list-style-type: none"> The EPA continues to utilise an internal communication program to inform staff about the importance of the NPI and the emission estimation techniques. Regular NPI 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 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The NPI NEPM is implemented in Victoria through the Waste Management Policy (National Pollutant Inventory) 2012 (WMP NPI).

While the Environment Protection Authority Victoria (EPA) experienced no major NPI-related implementation issues in 2017/18, EPA has some concerns regarding the quality and timeliness of the NPI data provided by industrial facilities. Neither the WMP NPI nor NPI NEPM contains penalty provisions because the initial intention was to encourage industry participation in the program. Absence of penalty provisions to support enforcement activities makes it difficult for government to ensure NPI reports are both submitted on time and contain accurate and comprehensive data.

EPA will continue to raise the issue of the NPI data quality and program enforceability during the upcoming statutory review of the NPI NEPM.

PART 2—ASSESSMENT OF NEPM 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"> 821 published reports for 2017-18 824 published reports for 2016-17 11 submitted reports for 2017-18 were withheld from publication 15 new reporters 0 confidentiality claims submitted 	<ul style="list-style-type: none"> Industry reporters described difficulties in using the NPI online reporting system, specifically the MS Excel calculation tools - such as it not being compatible with MS Excel version used by the reporter. 	<ul style="list-style-type: none"> 95% of published industry reports for 2017-18 were submitted on time. 97 % of published industry reports for 2017-18 were submitted online.
Government		
<ul style="list-style-type: none"> 270 desktop validations 6 audits (including 5 on-site audits and one desktop assessment) 1 regulatory action (Official Warning) 	<ul style="list-style-type: none"> No specific feedback was received from the government. EPA has previously used NPI data for air quality modelling; cross-checking licence compliance; prioritising compliance work; and to inform reviews of Victoria's Scheduled Premises Regulations and Environment Protection (Vehicle Emissions) regulations. 	

Queensland

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Queensland by Hon. Ms Leeanne Enoch MP, Minister for Environment and the Great Barrier Reef, Minister for Science, and Minister for the Arts for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

Opportunities exist to improve the effectiveness and implementation of the National Pollutant Inventory (NPI) through a strategic review. Queensland supports investigating these opportunities through the detailed review of the current National Environmental Protection (NPI) Measure.

PART 2—ASSESSMENT OF NEPM 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"> The Queensland State Government and Queensland industry provided submissions to the NPI review. 26 news articles were circulated in the 2018-19 year compared to 24 in the 2017-18 year. Community members made submissions to the 2018 NPI Review. 	<ul style="list-style-type: none"> NPI emissions and transfer reports were published through the Australian Government Open Data portal www.data.gov.au.
Industry		
<ul style="list-style-type: none"> 866 reports for 2017–18 (note 900 received 34 not published due to no emission or transfer data reported) 863 reports for 2016–17 24 new reporters 0 new sectors reporting 0 confidentiality claims submitted 	<ul style="list-style-type: none"> The NPI Online reporting system continues to be the preferred method for industry to submit their pollutant emissions and transfer data. 	<ul style="list-style-type: none"> 70% of facility reports were subject to desktop evaluation. 1 in-depth on-site NPI audit was conducted during the reporting period for machinery manufacturing.
Government		
<ul style="list-style-type: none"> 638 desktop audits 1 on-site audits 0 regulatory actions 	<ul style="list-style-type: none"> The Queensland Department of Environment and Science (DES) 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"> A Queensland wide survey of Department of Environment staff was conducted to ascertain NPI awareness levels, use of data and identify ways to improve NPI for end users of the data. As a result of the survey the NPI team is in the process of identifying which environmental authorities have/have not been captured by NPI reporting in order to identify potential non-reporters.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Western Australia by the Hon Stephen Dawson MLC, Minister for Environment; Disability Services; Electoral Affairs for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In Western Australia, the Department of Water and Environmental Regulation (DWER) 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 1987*. The implementation of the NEPM continues to be successful in Western Australia.

DWER 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 2016 was undertaken during the period to update the 2011-2012 aggregated emissions data for the greater Perth metropolitan region.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Public		
<ul style="list-style-type: none"> The number of community 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. 	<ul style="list-style-type: none"> 1 query received from public related to NPI implementation in WA.
Industry		
<ul style="list-style-type: none"> 833 reports for 2017–18 813 reports for 2016–17 24 new reporters 1 new sector reporting (wood chipping) no confidentiality claims submitted 	<ul style="list-style-type: none"> Widespread compliance with the online reporting system with 98 per cent uptake in WA for 2017–18. Some smaller facilities, mostly wineries and landfills, require above-average reporting guidance. Staff turnover and technical competency are the main drivers. Major industrial facilities maintain awareness of community interest in their emissions, and ensure reports accurately reflect site emissions. Support provided by the Department of Water and Environmental Regulation staff is 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.
Government		
<ul style="list-style-type: none"> 833 desktop audits 10 on-site audits no regulatory actions 	<ul style="list-style-type: none"> The Department of Water and Environmental Regulation uses National Pollutant Inventory NEPM data to inform policy development, program implementation and to support regulatory activity. The Department of Water and Environmental 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"> The Department of Water and Environmental 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 Hon. David Speirs, Minister for Environment and Water, for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In South Australia the Environment Protection Authority (SA EPA) implements the National Environment Protection (National Pollutant Inventory) Measure through the Environment Protection (National Pollutant Inventory) Policy 2008.
- South Australia has been involved in the Review of the National Pollutant Inventory (NPI) through its involvement within the NPI Intergovernmental Working Group (IWG) and the Steering Committee formed to oversee the Review. This has included the development of the NPI Review Discussion Paper that was released for public consultation on 2 July 2018 and the preparation of a SA government agencies response to the Discussion Paper. More recent discussions have focussed on options for how to progress the Review in light of the statutory review of the NEPC Act occurring in 2019. The Review of the NPI is important to deliver the necessary improvements to the NPI programme to ensure its longevity and utility in the future.
- A detailed air emissions inventory remains a strategic priority for both the NPI programme and the SA EPA. Aggregated emissions data are required for reliable comparison with industry emissions, however, program resourcing levels do not currently allow for the updating of aggregate emissions data (last done in South Australia in 2003).
- South Australia strongly supports the provision of a national NPI dataset to <https://data.gov.au/dataset/npi>. This is an important step in making information more accessible, easier to use for data analysis and for comparing to other datasets.

PART 2—ASSESSMENT OF NEPM 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 NPI website was recorded by the Commonwealth. 	<ul style="list-style-type: none"> There are occasional enquiries about NPI data from the general public. The media use NPI data. 	<ul style="list-style-type: none"> Prompt responses are made when NPI data is requested. Participated in the GovHack 2018 open data competition as a data mentor.
Industry		
<ul style="list-style-type: none"> 482 reports for 2017–18 479 reports for 2016–17 9 new reporters No new sectors reporting No confidentiality claims submitted 	<ul style="list-style-type: none"> Online reporting training has been well received by industry. Industry has expressed concern that the NPI emission calculation tools do not work with 64 bit version of Excel. 	<ul style="list-style-type: none"> A newsletter was emailed to reporters, and published on the SA EPA website, to inform reporters about updates and provide general information about NPI reporting. Industry enquiries have been promptly followed up. Training on NPI requirements, online reporting and ‘drop in’ sessions were held in Adelaide.
Government		
<ul style="list-style-type: none"> 482 desktop audits No on-site audits No regulatory actions 	<ul style="list-style-type: none"> The SA EPA utilises NPI data to implement the Resource Efficiency Component of its load based or ‘polluter pays’ licensing system. NPI 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 NPI Intergovernmental Working Group remains important for the discussion of policy, strategy and technical implementation details. Participation in the Review of the NPI is critical to ensuring its longevity and utility in the future.

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Tasmania by the Hon. Peter Gutwein MP, Minister for the Environment for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- NPI NEPM Goal A concerning information collection was met in Tasmania. Goal B concerning information dissemination was not met due to resourcing issues.
- NPI funding and support is an ongoing issue. Updated NPI emissions estimation techniques and other resources continue to be a critical need.
- The statutory review of the *National Environmental Protection Council Act 1994* initiated in December 2018 has caused a pause in the review of the NPI.

PART 2—ASSESSMENT OF NEPM 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 NPI website was recorded by the Commonwealth. 	<ul style="list-style-type: none"> The NPI review process generated local media interest. The public and journalists used the NPI database to examine emissions data for specific Tasmanian industries. Better interpretation tool and resources to facilitate transparency and better community access to NPI data are required. 	<ul style="list-style-type: none"> Public consultation for the NPI review generated some public interest.
Industry		
<ul style="list-style-type: none"> 140 reports for 2018–19 141 reports for 2017–18 5 new reporters 0 new sectors reporting 0 confidentiality claims submitted 	<ul style="list-style-type: none"> An upgrade to the Online Reporting System would improve and help streamline reporting thus reducing regulatory burden on reporters. The current emission estimation techniques are largely out of date and need to be updated to better reflect actual emissions. 	<ul style="list-style-type: none"> With assistance from NSW, a new Emissions Estimation Technique has been developed for use by Tasmanian landfill operators. Training, site visits and general assistance to industry is ongoing A specific requirement to comply with the NPI NEPM is being prepared for inclusion in notices issued by EPA.
Government		
<ul style="list-style-type: none"> 141 desktop audits 0 on-site audits 0 regulatory actions 	<ul style="list-style-type: none"> NPI data is used by regulatory agencies to gauge and quantify emissions. Emissions Estimation Techniques are occasionally used by EPA Tasmania when considering a regulatory response. 	<ul style="list-style-type: none"> Efforts to increase awareness of the NPI within EPA Tasmania and wider government are ongoing. Facilitation of an IWG meeting in Launceston and continued participation in IWG discussions. Continued participation on NPI Review Steering Committee

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for the Australian Capital Territory by Mr Mick Gentleman, MLA for the reporting year ended 30 June 2019.

PART 1 – IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- Access Canberra is responsible for the implementation and administration of the National Environment Protection (National Pollutant Inventory) Measure (the NEPM).
- The Environment Planning and Sustainable Development Directorate is responsible for the development of legislation and policy to ensure the NEPM is appropriately implemented in the Australian Capital Territory.
- The provisions of the NEPM are implemented through the *Environment Protection Act 1997*.

PART 2 – ASSESSMENT OF NEPM 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 2017–18 • 21 reports for 2016–17 • No new reporters • No new sectors reporting • No confidentiality claims submitted 	<ul style="list-style-type: none"> • Due to staff turnover, training was welcomed by the industry 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 NPI 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 the Northern Territory by the Hon Eva Lawler, Minister for Environment and Natural Resources for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The National Pollutant Inventory (NPI) program is implemented in the Northern Territory through the *Environment Protection (National Pollutant Inventory) Objective 2004* established under the *Waste Management and Pollution Control Act 1998*. Overall responsibility for implementation of the NPI rests with the Northern Territory Environment Protection Authority (NT EPA).
- Due to limited resourcing, 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 (AED) modelling as required by the NPI NEPM. AED includes diffuse sources of emissions such as fuel stations, motor vehicles and other non-road engines.

PART 2 — ASSESSMENT OF NEPM 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 the public 	<ul style="list-style-type: none"> • A statement was placed on the NT EPA website inviting the public to comment on the NPI Review Discussion Paper.
Industry		
<ul style="list-style-type: none"> • 105 reports for 2018–19 • 101 reports for 2017–18 • 7 new reporters • 0 new sectors reporting • 0 confidentiality claims submitted 	<ul style="list-style-type: none"> • One industry reporter complained about the NPI calculation tool not working after upgrading to a higher version of MS Excel. • Most reporters expressed their appreciation for assistance provided. 	<ul style="list-style-type: none"> • All industry reports were submitted online. • Almost all industry reports were submitted on time.
Government		
<ul style="list-style-type: none"> • 13 desktop audits • 0 on-site audits • 0 regulatory actions 	<ul style="list-style-type: none"> • Used selectively to determine potential impacts from emissions. 	<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 Sussan Ley MP, Minister for the Environment, for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM 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 Australian Packaging Covenant Organisation (APCO) is the industry body responsible for managing signatories to the Covenant and supporting industry action against the goals of the Covenant.
- The majority of packaging brand owners in Australia fall within one or more state and territory jurisdiction. 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 governments to report annually on brand owners that are subject to NEPM requirements, survey 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 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 therefore 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 NEPC on the overall national performance of the Covenant. In accordance with Section 19 of the NEPM, the Commonwealth is to be provided information 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 APCO
 - 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, and
 - a statement of interpretation of the information.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

At the end of June 2019, there were 1,467 Covenant signatories, of which 1,454 (99.1 per cent) were compliant. Non-compliant signatories are removed from the register of Covenant signatories and referred to the relevant state or territory government for follow up under the NEPM in that 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 APCO
- 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 APCO
- 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 APCO
- 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, and
- assist APCO to respond to complaints from the public about the design and use of packaging materials.

If a signatory to the Covenant does not meet one or more of the above obligations, the non-compliant signatory is removed from the Register of Signatories and APCO notifies the relevant state or territory government that the business is no longer a Signatory. APCO deems a business referred once the state or territory government has been notified.

Reporting Year	Number of covenant signatories
2017–18	886
2018–19	1467

The number of signatories increased in 2018-19 from the previous reporting year. This increase is a result of the brand owner audit undertaken by APCO in 2018 to identify non-signatory organisations who are not currently meeting their obligations under the NEPM. In total, 558 businesses became signatories to the Covenant in 2018-19 through the brand owner audit process.

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.

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. Matt Kean MP, Minister for Energy and Environment, for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM 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, business recycling and littering. Up to June 2019 Waste Less, Recycle More has awarded \$58.7 million towards the construction of 18 new major resource recovery facilities and \$22.8 million towards the expansion and enhancement of 47 existing resource recovery facilities, funded free bin trim waste assessments for more than 28,000 small to medium businesses, and supported 223 litter prevention projects with \$9.3 million in funding.

The NSW Government and Environment Protection Authority (EPA) are undertaking a number of programs and initiatives to drive a reduction in litter including:

- Working with the Australian Packaging Covenant Organisation to reduce the impacts of packaging waste through involvement in four key working groups focussed on projects under the themes: Data Analysis and Strategic Planning; Packaging Design, Consumer Education, Industry Engagement, Collection and Processing, and Procurement.
- The Report to EPA littering from vehicle program, promoted through the ‘Don’t be a Tosser’ campaign, now has over 40,000 registered community reporters and has resulted in over 35,000 litter fines being issued since it was introduced in February 2015.
- NSW has reduced eligible drink container litter volume by 57% since November 2017, primarily through the Return and Earn scheme. The community has embraced Return and Earn, with over 2 billion drink containers returned across the state since the scheme commenced on 1 December 2017, of which 1.5 billion were in the 2018-19 financial year.
- The NSW Litter Prevention Program targets all littered items in NSW. The program includes the Don’t be A Tosser education campaign and the council and community grant program that has provided \$9.3 million for over 220 projects. It has delivered 24% of the 37% reduction.

In addition to litter initiatives, in February 2019 the NSW Government published the Circular Economy Policy Statement.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

NSW has worked closely with the Australian Packaging Covenant Organisation (APCO) to ensure business compliance with the NEPM:

- supporting APCO’s June 2018 brand audit
- responding to enquiries from businesses that are not members of APCO or abiding by the relevant state law on packaging (Part 8 of the Protection of the *Environment Operations (Waste) Regulation 2014*).

This action led to new signatories. NSW has also communicated with a number of businesses that have sought clarification on their regulatory requirements.

Table 1 - Number of covenant signatories by reporting year

Reporting Year	Number of covenant signatories
2017-18	380
2018-19	607

Recovery data

Nil (no brand owner was subject to record-keeping obligations under the NSW Waste Regulation).

Supporting data

APCO defines compliance obligations as:

- submission of an annual report
- having a current action plan in place, and
- payment of an annual membership fee.

In the case where a signatory does not meet one or more of the above obligations, the non-compliant signatory is removed from the register of signatories that are compliant with the requirements of the covenant and is referred to the relevant jurisdiction.

During the 2017-18 financial year, 15 NSW businesses were referred to the NSW Government for noncompliance; one of those organisations re-signed with APCO during 2018-19.

A brand owner survey was conducted in June 2018, with 1,818 NSW companies approached by APCO. As a result of this survey, 722 businesses were referred to the NSW Government as they appeared not to be complying with the APCO obligations; this did not include the 14 referred during the 2017-18 financial year.

NSW is working with the Commonwealth, other jurisdictions and APCO to develop and implement a behaviour change program to encourage and promote organisations to become signatories prior to initiating regulatory enforcement actions.

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

NSW has continued to focus on the reduction of packaging waste through Waste Less, Recycle More. It has also engaged with APCO and relevant businesses to meet the NEPM's outcomes.

Local government data

Local government data is available on the NSW Environment Protection Authority's website <http://www.epa.nsw.gov.au/wastetools/surveys.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 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The NEPM is implemented in Victoria is through the Waste Management Policy (Used Packaging Materials) (WMP).
- The methodology for auditing brand owners under clause 16(4) of the NEPM has been agreed and adopted across all jurisdictions.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

The main purpose of the Used Packaging Materials NEPM is to establish a statutory basis for ensuring that brand owners that have signed up to the Australian Packaging Covenant are not competitively disadvantaged in fulfilling their commitments under the Covenant by non-signatories.

The Secretariat of the Covenant makes initial approaches to companies that are identified as brand owners (or potential brand owners) to encourage them to become signatories to the Covenant. This activity increased in this reporting year and explains the significant increase in the number of Covenant signatories in Victoria.

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.

Victoria, along with the Commonwealth and other jurisdictions have initiated a process to identify free riders and start them reporting on their obligations.

As of 30 June 2019, there were 1462 signatories to the Covenant nationally. Victoria has 519 signatories, making 35% of all signatories.

Reporting Year	Number of covenant signatories
2017–18	324
2018–19	519

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 ascertain the effectiveness of the measure in preventing free riding. 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 (sourced from Sustainability Victoria) is published on EPA Victoria's website:
<https://www.epa.vic.gov.au/for-community/environmental-information/waste>

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Queensland by Leeanne Enoch MP, Minister for Environment and the Great Barrier Reef, Minister for Science, and Minister for the Arts.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

No issues arose during the reporting year.

PART 2 — ASSESSMENT OF NEPM EFFECTIVENESS

Reporting Year	Number of covenant signatories
2017–18	66
2018–19	121

Recovery Data

Audits of brand owner records were not conducted in 2018/19. In August 2015, a meeting of jurisdictions and industry resolved that jurisdictions would no longer carry out the brand owner audits and that industry would take responsibility from 1 July 2016.

Supporting Data

Nil response

Complaints, Investigations and Prosecutions

No complaints received, investigations commenced or prosecutions commenced.

Statement of Interpretation of the Information

Nil response.

Local Government Data

Local government data for the reporting period will be available in the 2018/19 annual recycling and waste report.

The report will be published at www.qld.gov.au/environment/pollution/management/waste/data-reports/recycling-waste (expected by early 2020).

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Western Australia by the Hon. Stephen Dawson MLC, Minister for Environment; Disability Services; Electoral Affairs for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In Western Australia, the National Environmental Protection (Used Packaging Materials) Measure (NEPM UPM) is implemented by the Department of Water and Environmental Regulation under the *Environmental Protection (NEPM-UPM) Regulations 2013*.
- The Australian Packaging Covenant Organisation did not refer any non-compliant signatories in 2018-2019.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

No compliance activity undertaken during the reporting period.

Reporting Year	Number of covenant signatories
2017–18	40
2018–19	105

Recovery Data

No Western Australian based companies have been required to provide records for auditing.

Supporting Data

Not applicable.

Complaints, Investigations and Prosecutions

No complaints were received, or investigated or prosecutions undertaken, during the 2018-2019 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 2020.

South Australia

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for South Australia by the Hon. David Speirs, Minister for Environment and Water, for the reporting year ended 30 June 2019.

PART 1 – IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In 2018-2019, South Australia continued to work with the Australian Packaging Covenant Organisation (APCO), industry and other jurisdictions to pursue national consistency in the attainment of the goal of the NEPM. The Environment Protection Authority (EPA) has representation on the Government Officials Group (GOG) which has been meeting frequently in 2018-2019 to provide advice to APCO to pursue a consistent national approach when administering the NEPM.

The National Environment Protection (Used Packaging Materials) Measure 2011 is the legal instrument to ensure that signatories to the Covenant are not competitively disadvantaged in the market place by fulfilling their commitments under the Covenant.

PART 2 – ASSESSMENT OF NEPM EFFECTIVENESS

Jurisdictions should provide an overview of the effectiveness of the NEPM in their jurisdiction. This overview should focus on achievement of the NEPM Goal and Desired Environmental Outcomes(s) and should identify significant factors which have contributed to or hindered achievement of the Goal and Desired Environmental Outcome(s).

South Australia is currently working with APCO to ensure signatories continue to meet their obligations and requirements under the Covenant.

Reporting Year	Number of covenant signatories
2017–18	48
2018–19	79

Recovery Data

There are currently no brand owners reporting to the EPA in South Australia and, therefore, no requirements for audits under clause 16.

Supporting Data

Clause 18 of the NEPM requires that at least once every year, participating jurisdictions ensure that surveys of packaged products sold by retailers and/or surveys of brand owners represented in materials recovery systems are carried out, to ascertain the effectiveness of the NEPM in preventing free riding.

This has transitioned to an APCO responsibility and in 2018 APCO conducted a national brand owner audit of packaged products for the purpose of identifying potentially obligated signatories as agreed under the 2017 Australian Packaging Covenant arrangements.

Complaints, Investigations and Prosecutions

No complaints were received, investigations undertaken or prosecutions mounted pursuant to the NEPM during this reporting period.

Statement of Interpretation of the Information

South Australia continued to work with APCO, the Commonwealth and other jurisdictions to provide advice and support for the implementation of the Covenant through a range of initiatives.

South Australia has been working with all other jurisdictions through the GOG to pursue a consistent approach to the application of the NEPM objectives and obligations to ensure consistency across all jurisdictions.

Local Government Data

Local Government data for the 2018-19 reporting period will be available at 2018-19 NEPM Annual Report – Local Government Data from end November 2019.

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Tasmania by the Hon. Peter Gutwein MP, Minister for the Environment, for the reporting year ended 30 June 2019.

PART 1 – IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

Legislative, regulatory and administrative framework

The National Environment Protection (Used Packaging Materials) Measure (NEPM) is a state policy under the *State Policies and Projects Act 1993*.

Implementation Issues Arising

Nil.

PART 2 – ASSESSMENT OF NEPM EFFECTIVENESS

In the 2018 to 2019 reporting period Tasmania worked with the Australian Packaging Covenant Organisation (APCO) in development of communications to brand owners detailing obligations under the NEPM.

The Tasmanian Government continues to support the implementation of the Australian Packaging Covenant through membership of the Government Officials Group, which is the formal mechanism of engagement between APCO and jurisdictional Governments.

The NEPM has provided an incentive for brand owners to join the Covenant. Tasmania has fifteen company signatories and seventeen covenant signatories overall.

Reporting Year	Number of covenant signatories
2017–18	17
2018–19	21

Recovery Data

No recovery data to report under Clause 16 of the NEPM.

Supporting Data

No surveys pursuant to clause 18 were 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 initiated.

Statement of Interpretation of the Information

Not applicable.

Local Government Data

Year (reporting period): 1 July 2017 — 30 June 2018

Total number of Councils reporting: 28 of 29

Percentage of total Councils: 96.6% Total

Total councils reporting, broken down into the three Regional Waste Management Groups:

Northern Tasmanian Waste Management Group – 8 councils reported

Cradle Coast Waste Management Group – 6 councils reported

Southern Waste Strategy Authority – 12 councils reported

Independent Councils – 2 councils reported

Container types and collection frequencies for all containers provided for kerbside collection by number of Councils (e.g. crate/split bin/bag):

Container type	Material type collected in container	Frequency of service	Total No. of councils
MGB 140L	Comingled recyclables	Fortnightly	1
MGB 240L	Comingled recyclables	Fortnightly	19
MGB 140L & 240L options	Comingled recyclables	Fortnightly (for both options)	8

Other type of recycling services (e.g. drop off) by number of Councils: All councils provide alternative drop-off facilities either at the landfills or waste transfer stations. Several councils offer recycling bins at council parks and grounds.

Total Number of premises/households:

Residential 215,735

Non-Residential 22,915

Number of households/premises serviced by recycling collections:

Kerbside: Drop off (Optional):

Residential 207,722 93,363

Non-residential 3,076 24,528

Average premises fee charged by Councils for recycling services.

Residential \$ 93.57 Non-residential \$ 153.13

Annual average per premises cost to Council to provide a recycling service.

Residential \$ 68.93 Non-residential \$ 72.81

Proportion of household/premises with access to a recycling service. 80%

Average participation rate: 83%

Table 1: Amounts of materials collected at the kerbside, sent for secondary use/energy recovery and contamination (waste) disposed of to landfill 1 July 2017—30 June 2018

Material Types collected at kerbside	Kerbside recycling collected (in tonnes)	Kerbside recycling sold or sent for secondary use including energy recovery by material type (in tonnes)	Kerbside recycling residual waste (contaminants) disposed of to landfill (only report total tonnes)
Total packaging paper i.e. cardboard and liquid paper board		21,738	
Total non packaging paper i.e. paper mixed, paper white office, newspaper and magazines		5,275	
Total glass		15,317	
Total plastics		3,202	
Total aluminium (cans)		557.81	
Total steel (cans, tins etc.)		867.08	
Total	51,276	46956.35	4319.52

Residual waste (contaminants) disposed to landfill were not differentiated by material type.

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for the Australian Capital Territory by Mr Mick Gentleman MLA for the reporting year ended 30 June 2019.

PART 1 — IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The *Waste Management and Resource Recovery Act 2016* (the Waste Act) continues to be implemented in the ACT to manage all waste activities. Under the Waste Act, all waste facilities are licensed, and waste transporters registered, with both required to report the amounts and types of waste handled each quarter.
- While the ACT previously had an Industry Waste Reduction Plan (IWRP) that met the Used Packaging Materials (UPM) obligation under the *Waste Minimisation (Used Packaging Materials Industry Waste Reduction Plan) Approval 2013* (No 1), it was repealed in 2017 when the Waste Act commenced.
- The Waste Act provides the Government with powers to establish mandatory codes of practice. A new code of practice is being developed to implement the NEPM (UPM).
- The ACT Container Deposit Scheme (CDS), also enabled under the Waste Act, continues to support the recovery of beverage containers in the ACT and reduce litter.
- The ACT Government continues to implement the *Waste Management Strategy 2011–2025* and work towards full resource recovery via a suite of measures including education, regulation, operating efficient collection systems, and planning for new waste infrastructure.
- This includes working to manage single-use plastics in the Territory. Following consultation with businesses and the public in 2019, the ACT Government is considering possible approaches to phasing out specific single-use plastics.
- As a signatory to the Australian Packaging Covenant, the ACT is represented at meetings on a regular basis and engages with other jurisdictions on reducing packaging waste and achieving the Meeting of Environment Ministers endorsed target of 100% of Australian packaging being recyclable, reusable and compostable packaging by 2025. To support the implementation of the National Packaging Targets, ACT NoWaste represents the ACT on all four of the Australian Packaging Covenant Organisation's cross-industry collaborative forums, covering National Packaging Target Implementation; Design; Systems and Education; and Materials Circularity.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Reporting Year	Number of covenant signatories
2017–18	4
2018–19	9

Recovery Data

Maximising the recovery and re-use of resources is one of the six objects of the Waste Act. Data concerning the volumes and types of materials recovered is being collected through quarterly reporting under the Waste Act. This data will provide a comprehensive picture of the ACT's waste sector and the fate of all materials that comprise it.

No brand owners' records were audited in 2018-19. A proposed code of practice would allow for a program to monitor compliance of used packaging recovery data against performance targets into the future.

Supporting Data

No retailer survey of packaged products was conducted in the ACT in 2018–19.

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 2018-19 with respect to the NEPM (UPM).

Statement of Interpretation of the Information

Over 2018-19 the ACT continued to work with the community and industry to encourage waste avoidance and increase recycling rates. The proposed phasing out of certain single-use plastic products would support the management of used packaging in the Territory, alongside the ongoing implementation of the CDS. These initiatives will support the proposed code of practice into the future.

Local Government Data

Data for the ACT will be provided on the Transport Canberra and City Services Directorate website as it becomes available at www.tccs.act.gov.au.

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 Eva Lawler MLA, Minister for Environment and Natural Resources for the reporting year ended 30 June 2019.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

Prior to 2017-18 there were no known major brand owners based in the Northern Territory who are likely to have responsibilities under the National Environment Protection (Used Packaging Materials) Measure (UPM NEPM). In May 2018, the Australian Packaging Covenant Organisation (APCO) advised that its 2018 Brand Audit identified Northern Territory businesses that may be liable under the UPM NEPM. The Northern Territory is reviewing provisions within its existing legislative framework, including under the *Waste Management and Pollution Control Act 1998*, to determine the regulatory mechanisms that can be applied legislatively in the event that Northern Territory brand owners with obligations under the NEPM are found to be non-compliant.

The *Environment Protection (Beverage Containers and Plastic Bags) Act 2011* (the Act) established the container deposit scheme (CDS) 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. The CDS commenced in January 2012.

The Northern Territory's environmental grants program encourages community participation in minimising waste and preventing pollution. In 2018-19 the Territory granted approximately \$500,000 for projects and activities targeting waste management, minimisation and recycling from a total grant program of \$1.1 million.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

As a result of the 2018 APCO Brand Audit, there has been one single brand-owner identified in the Northern Territory that would have obligations under the NEPM and is now a signatory of the Australian Packaging Covenant.

There has been no reporting under clause 16 of the NEPM.

No surveys of brand owners were conducted in 2018-19 under clause 18.

Of the 17 councils within the Northern Territory, in 2018-19 only two provided kerbside recycling services – City of Darwin and Palmerston. This is primarily due to the small, dispersed population and distance to markets. 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.

The Container Deposit Scheme provides the most accurate and reliable indication of beverage containers.

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.

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
2017-18	0
2018-19	1

Recovery Data

A total of 131,039,766 approved beverage containers were sold in the Northern Territory during 2018–19. Of these, 110,678,233 containers were returned by a collection depot to a CDS coordinator. This equates to 84% of all containers sold were returned, recycled and reused through the CDS, thereby diverted from landfill and litter. This is an increase in return rate for 2017-18 was 75%, this is a continuing trend of increasing return rates over previous years and is likely to be attributed to increased environmental awareness, community participation and access to recycling facilities.

A desktop audit of CDS data conducted in 2018-19 identified inconsistent reporting by CDS coordinators and that under-reporting in 2016-17 had contributed to the reported annual return rate of 48% in 2016-17. Corrected 2016-17 data provided by CDS coordinators indicates that during 2016-17 a total of 149,752,726 approved containers were sold in the Northern Territory. Of these, 90,704,612 were returned to CDS coordinators and diverted from landfill. This equates to an annual return rate of 61% in 2016-17. This corrected return rate contributes to a relatively consistent increase in annual return rates since the introduction of CDS in 2012.

Supporting Data

N/A

Complaints, Investigations and Prosecutions

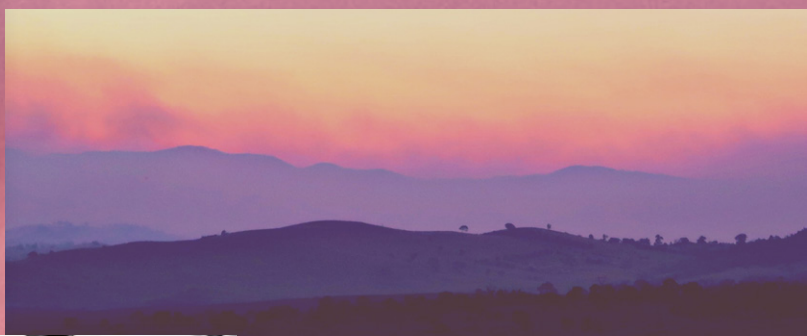
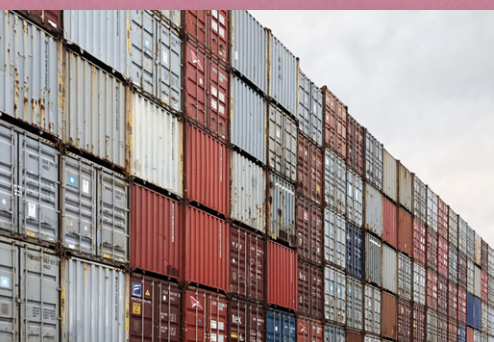
No complaints have been received, investigations undertaken or prosecutions mounted pursuant to this measure.

Statement of Interpretation of the Information

N/A

Local Government Data

N/A



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