

2026

**THE LEGISLATIVE ASSEMBLY FOR THE
AUSTRALIAN CAPITAL TERRITORY**

ELEVENTH ASSEMBLY

**NATIONAL ENVIRONMENT PROTECTION COUNCIL
ANNUAL REPORTS 2019-2020**

**Presented by
Suzanne Orr MLA
Minister for Climate Change, Environment, Energy and Water
May 2026**



annualreport

2019–2020



Annual Report 2019–20

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Members of the National Environment Protection Council

From 1 July 2019 to 30 June 2020

Jurisdiction	Member	Duration of membership
Commonwealth	The Hon Sussan Ley MP Minister for the Environment	Full year
New South Wales	The Hon Matt Kean MP Minister for Energy and Environment	Full year
Victoria	The Hon Lily D'Ambrosio MP Minister for Energy, Environment and Climate Change	Full year
Queensland	The Hon Leanne 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 Roger Jaensch MP Minister for Environment	24 January 2020 – 30 June 2020
	The Hon Elise Archer MP Minister for Environment	2 October 2017 – 24 January 2020
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	Full year

Contents

Members of the National Environment Protection Council	ii
Overview	1
National Environment Protection (Air Toxics) Measure	4
National Environment Protection (Ambient Air Quality) Measure	10
National Environment Protection (Assessment of Site Contamination) Measure	16
National Environment Protection (Diesel Vehicle Emissions) Measure	22
National Environment Protection (Movement of Controlled Waste between States and Territories) Measure	28
National Environment Protection (National Pollutant Inventory) Measure	36
National Environment Protection (Used Packaging Materials) Measure	42
Appendix 1: Jurisdictional reports on the implementation and effectiveness of the Air Toxics National Environment Protection Measure	48
Commonwealth	50
New South Wales	51
Victoria	54
Queensland	55
Western Australia	58
South Australia	59
Tasmania	60
Australian Capital Territory	62
Northern Territory	63
Appendix 2: Jurisdictional reports on the implementation and effectiveness of the Ambient Air Quality National Environment Protection Measure	64
Commonwealth	66
New South Wales	67
Victoria	85
Queensland	89
Western Australia	95
South Australia	100
Tasmania	104
Australian Capital Territory	108
Northern Territory	111
Appendix 3: Jurisdictional reports on the implementation and effectiveness of the Assessment of Site Contamination National Environment Protection Measure	114
Commonwealth	116
New South Wales	117
Victoria	118
Queensland	120
Western Australia	122
South Australia	124
Tasmania	126
Australian Capital Territory	127
Northern Territory	128

Appendix 4: Jurisdictional reports on the implementation and effectiveness of the Diesel Vehicle Emissions National Environment Protection Measure	130
Commonwealth	132
New South Wales	133
Victoria	137
Queensland	139
Western Australia	141
South Australia	144
Tasmania	146
Australian Capital Territory	148
Northern Territory	150
Appendix 5: Jurisdictional reports on the implementation and effectiveness of the Movement of Controlled Waste between States and Territories National Environment Protection Measure	152
Commonwealth	154
New South Wales	155
Victoria	159
Queensland	161
Western Australia	164
South Australia	167
Tasmania	170
Australian Capital Territory	172
Northern Territory	175
Appendix 6: Jurisdictional reports on the implementation and effectiveness of the National Pollutant Inventory National Environment Protection Measure	178
Commonwealth	180
New South Wales	183
Victoria	185
Queensland	187
Western Australia	189
South Australia	191
Tasmania	193
Australian Capital Territory	194
Northern Territory	195
Appendix 7: Jurisdictional reports on the implementation and effectiveness of the Used Packaging Materials National Environment Protection Measure	196
Commonwealth	198
New South Wales	200
Victoria	202
Queensland	204
Western Australia	205
South Australia	206
Tasmania	207
Australian Capital Territory	210
Northern Territory	212

Overview

ABOUT THE NATIONAL ENVIRONMENT PROTECTION COUNCIL

The *National Environment Protection Council Act 1994* (Cth) (the NEPC Act) formally establishes the National Environment Protection Council (the Council) as a body to determine national environment protection measures. Each state and territory has mirror legislation to support this establishment. 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.

The Council received operational, administrative and corporate support from the NEPC Secretariat within the Australian Government Department of Agriculture, Water and the Environment (the Department).

THE NATIONAL ENVIRONMENT PROTECTION COUNCIL COMMITTEE

The National Environment Protection Council (NEPC) Committee is also established under the NEPC Act. The Committee consists of a NEPC Executive Officer, and a nominee of each member of the Council. This is usually the head of the environment agencies within each jurisdiction. The Council delegates most of its responsibilities to the NEPC Committee. In addition, the NEPC 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 role of the Executive Officer is to provide assistance and support to the Council and the Committee.

Mr Adam Carlon was the NEPC Executive Officer for the 2019–2020 reporting year until 16 June 2020 when Ms Karen Moloney was appointed to the role.

GOVERNANCE STRUCTURE OF THE COUNCIL AND INTER-JURISDICTIONAL RELATIONSHIPS

As membership of the Council consists of all Australian environment ministers, the Meetings of Environment Ministers are held in conjunction with meetings of the Council and the Environment Minister's Meeting is the primary multi-jurisdictional forum at which national environmental issues are considered. The following streamlined approach to multi-jurisdictional environmental work has been agreed by Environment Ministers:

- Environment Ministers Meetings occur on an ad hoc basis and run concurrently with meetings of the National Environment Protection Council as required. Agendas are focused on issues requiring multi-jurisdictional collaboration or decision.
- Meetings of the heads of jurisdictional environment agencies (Senior Officials Group) are held on a regular basis – at least annually, and concurrently with NEPC Committee meetings.
- Ongoing communication occurs between the Senior Officials/NEPC Committee groups and the Heads of Environmental Protection Agencies network. Where relevant, the Heads of Environmental 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 Environment Ministers Meetings 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 vary 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. These are reported against in the Department's annual report.

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

PROCUREMENT, CONSULTANCIES AND FINANCIAL PERFORMANCE

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

Detailed financial matters are contained in the financial statements within the Department's 2019–20 annual report.

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)

Amendment Date: 16 October 2011

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 by each jurisdiction against the evaluation criteria at schedule 4 of the NEPM: [National Environment Protection \(Air Toxics\) Measure | nepc \(https://www.nepc.gov.au/nepms/air-toxics\)](https://www.nepc.gov.au/nepms/air-toxics).

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	The NEPM is implemented administratively.
New South Wales	The NEPM is implemented under the <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i>, the <i>Protection of the Environment Operations (General) Regulation 2009</i> and the <i>Protection of the Environment Operations Act 1997</i>.
Victoria	The key legislative instrument is the State Environment Protection Policy (Air Quality Management), subordinate legislation made under the <i>Environment Protection Act 1970</i>.
Queensland	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 2019.
Western Australia	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	The NEPM operates as an Environment Protection Policy under the <i>Environment Protection Act 1993</i>.
Tasmania	- The NEPM is a State Policy under the <i>State Policies and Projects Act 1993</i>. The management of air toxics is included in the Environment Protection Policy (Air Quality) 2004 and the Tasmanian Air Quality Strategy 2006. - The NEPM is enabled through the <i>Environmental Management Pollution Control Act 1994</i>.
Australian Capital Territory	The NEPM is implemented under the <i>Environment Protection Act 1997</i>.
Northern Territory	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 1994</i>.

Implementation issues arising

Table 2 summarises the implementation issues that arose throughout the 2019 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	No issues reported.
New South Wales	No issues reported.
Victoria	No issues reported.
Queensland	Non-NEPM compliant monitoring undertaken.
Western Australia	No issues reported.
South Australia	No issues reported.
Tasmania	No issues reported.
Australian Capital Territory	The ACT Government has previously undertaken a desktop analysis which showed that air toxics are not an issue for the ACT airshed.
Northern Territory	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 2019–20 reporting period including ambient monitoring of benzene, toluene, xylenes and formaldehyde using DOAS instrumentation continued at Springwood in South-East Queensland and central Gladstone.

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 NEPM continues to provide a nationally consistent framework for monitoring and reporting ambient levels of specified air toxics across diverse monitoring sites.

Responses from jurisdictions to a survey of jurisdictional needs and activity under this NEPM indicated that while it does fulfil a useful role, it may benefit from further work to improve its ability to adequately address air toxics in Australia.

PART 5—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 1:

Annex 1:	Commonwealth	50
Annex 2:	New South Wales	51
Annex 3:	Victoria	54
Annex 4:	Queensland	55
Annex 5:	Western Australia	58
Annex 6:	South Australia	59
Annex 7:	Tasmania	60
Annex 8:	Australian Capital Territory	62
Annex 9:	Northern Territory	63

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)

Amendment Dates: 2 June 2003, 3 February 2016

NEPM goal (or purpose)¹

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 by jurisdictions against the evaluation criteria outlined at clause 17 in the NEPM: [National Environment Protection \(Ambient Air Quality\) Measure | nepc \(https://www.nepc.gov.au/nepms/ambient-air-quality\)](https://www.nepc.gov.au/nepms/ambient-air-quality).

¹ The NEPM goal and desired environmental outcomes were updated on 18 May 2021
– see <https://www.legislation.gov.au/F2007B01142/latest/text>

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	The Commonwealth implements the NEPM administratively. However, it does not undertake monitoring as there are currently no non-self governing Commonwealth territories or Commonwealth regions with a population above the 25,000 NEPM protocol threshold.
New South Wales	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	The key legislative instruments are the <i>State Environment Protection Policy (Ambient Air Quality)</i> and the <i>State Environment Protection Policy (Air Quality Management)</i> made under the <i>Environment Protection Act 1970</i>.
Queensland	The NEPM is implemented under the <i>Environmental Protection Act 1994</i>, the <i>Environmental Protection Regulation 2008</i>, and the <i>Environmental Protection (Air) Policy 2008</i>.
Western Australia	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	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	- 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 <i>Tasmanian Air Quality Strategy 2006</i>. - The NEPM is a state policy under the <i>State Policies and Projects Act 1993</i>.
Australian Capital Territory	The NEPM is implemented under the <i>Environment Protection Act 1997</i>.
Northern Territory	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

The Black Summer bushfires of December 2019 and January 2020 were a significant air quality event for major population centres in Eastern and Southern mainland Australia. The fires lasted many weeks, with fine and coarse particulates regularly at hazardous levels, and significant exceedances of ozone levels. Under the NEPM, bushfires are considered exceptional events. Accordingly, for compliance purposes the high pollutant levels during this period are not counted as exceedances.

Drought, resulting in either continental scale windblown dust or localised dust storms, also had a significant negative impact on air quality in New South Wales, South Australia and Queensland during the reporting period.

Table 2 summarises the implementation issues that arose throughout the 2019 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	No monitoring undertaken because the NEPM is implemented administratively.
New South Wales	Six of 32 stations recorded less than 75% data availability for at least one pollutant over any three-month period, noting that two of those six stations began operating in 2019.
Victoria	Data capture targets were not met at number of stations for some pollutants due to instrumentation issues, power supply issues or station relocation.
Queensland	No issues reported.
Western Australia	- A monitoring site was established at Mandurah in October 2019. - No issues reported.
South Australia	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	No issues reported.
Australian Capital Territory	No issues reported.
Northern Territory	No issues reported.

PART 3—JURISDICTIONAL REPORT ON ACTIVITIES UNDER THE NEPM

All jurisdictions continued to review and strengthen the Ambient Air Quality standards for ozone, nitrogen dioxide and sulfur dioxide. Over 18,000 submissions were received during the public consultation process on updated draft standards which took place from May 2019.

The Black Summer bushfires were major pollution events for most of the eastern seaboard. Inconsistency between jurisdictions in how health advice corresponded to pollutant thresholds, along with concerns regarding the usefulness of data reported in line with 24 hour averaging conventions, led to a call for a nationally consistent measurement and communications regime across all jurisdictions. Work has commenced on nationally consistent air quality information and health advice to be applied across Australia. This work is being undertaken by representatives from different jurisdictions in the Environmental Health Standing Committee (enHealth).

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 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 challenge for larger metropolitan areas in several 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 some jurisdictions, particularly those in eastern and southern Australia.

PART 5—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 2:

Annex 1:	Commonwealth	66
Annex 2:	New South Wales	67
Annex 3:	Victoria	85
Annex 4:	Queensland	89
Annex 5:	Western Australia	95
Annex 6:	South Australia	100
Annex 7:	Tasmania	104
Annex 8:	Australian Capital Territory	108
Annex 9:	Northern Territory	111

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)

Amendment date: 16 May 2013

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 by each jurisdiction in line with the reporting requirements outlined at clause 9 of the NEPM: [National Environment Protection \(Assessment of Site Contamination\) Measure | nepc \(https://www.nepc.gov.au/nepms/assessment-site-contamination\)](https://www.nepc.gov.au/nepms/assessment-site-contamination).

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	The NEPM is implemented administratively.
New South Wales	The NEPM operates under guidelines issued under the <i>Contaminated Land Management Act 1997</i>.
Victoria	- The key legislative instruments for administering the NEPM are: - the State Environment Protection Policy (Prevention and Management of Contamination of Land) - the State Environment Protection Policy (Waters) - the Environment Protection (Industrial Waste Resource) Regulations 2009 (https://www.legislation.vic.gov.au/as-made/statutory-rules/environment-protection-industrial-waste-resource-regulations-2009) - the <i>Planning and Environment Act 1987</i> - The Environmental Audit System (Contaminated Land) provides the administrative framework for assessing site contamination.
Queensland	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	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	The <i>Environment Protection Act 1993</i> provides a legislative framework to manage site contamination, including prescribed technical guidelines.
Tasmania	- The NEPM is a state policy under the <i>State Policies and Projects Act 1993</i>. - The NEPM is implemented under the <i>Environmental Management and Pollution Control Act 1994</i>, the <i>Environmental Management and Pollution Control (Underground Petroleum Storage Systems) Regulations</i> and associated guidelines.
Australian Capital Territory	The NEPM is implemented by the Contaminated Sites Environment Protection Policy 2017 made under the <i>Environment Protection Act 1997</i>.
Northern Territory	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. 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.

Some jurisdictions have noted that updating the ASC NEPM to include PFAS and amending NEPC processes to allow the easier addition of criteria for emerging contaminants and deriving new Ecological Investigation Levels (EILs) would be desirable. Jurisdictions also suggested expanding 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	- Continued to conduct site assessments in accordance with the NEPM. - No issues reported.
New South Wales	- 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. - Noted there was contention around the definition of friable asbestos within the NEPM and impacts to guidance, assessment and remediation.
Victoria	- Continued to question the adequacy of the Health Investigation Levels (HILs) for lead in soil for the protection of human health. - Noted the lack of guidance relating to emerging contaminants of concern.
Queensland	Suggested additional guidance for particular common types of contamination including fluorinated organic chemicals that are now commonly encountered on contaminated sites would assist the implementation of the NEPM.
Western Australia	- Again, 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	Continued to raise 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	Supported continued development of the NEPM including guidance on managing emerging contaminants of concern and ongoing addition and review of soil and groundwater criteria.
Australian Capital Territory	Requested changes to NEPM development to allow for the inclusion of criteria for emerging contaminants outside of the formal review process.
Northern Territory	Ongoing 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

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 like 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 provides consistent, science based, and effective national methodology and guidance to professional practitioners in assessing site contamination that is used across Australia by industry, site owners, and governments.

The 2013 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 noted it would be helpful for the NEPM to include updated standards, and emerging chemicals.

PART 5—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 3:

Annex 1:	Commonwealth	116
Annex 2:	New South Wales	117
Annex 3:	Victoria	118
Annex 4:	Queensland	120
Annex 5:	Western Australia	122
Annex 6:	South Australia	124
Annex 7:	Tasmania	126
Annex 8:	Australian Capital Territory	127
Annex 9:	Northern Territory	128

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)

Amendment Date: 5 June 2009

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 outlined in the NEPM: [National Environment Protection \(Diesel Vehicle Emissions\) Measure | nepc \(https://www.nepc.gov.au/nepms/diesel-vehicle-emissions\)](https://www.nepc.gov.au/nepms/diesel-vehicle-emissions).

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	- The NEPM is supported by the Australian Design Rules under the <i>Motor Vehicle Standards Act 1989</i>, the <i>Fuel Quality Standards Act 2000</i> and the <i>Fuel Quality Standards Regulations 2019</i>. - The National Measurement Institute (NMI) conducts monitoring, compliance and enforcement activities to detect and respond to non-compliance against these standards and regulations.
New South Wales	- The key legislative instruments are the <i>Protection of the Environment Operations Act 1997</i> and the <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i>. - The NEPM is implemented by Environment Protection Authority and Transport for New South Wales programs.
Victoria	- 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	- 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	- The NEPM is implemented by the <i>National Environment Protection Council (Western Australia) Act 1996</i>, the <i>Environmental Protection Act 1986</i>. - Vehicle emissions are regulated under the <i>Road Traffic (Vehicles) Act 2012</i> and <i>Road Traffic (Vehicles) Regulations 2014</i>, administered by the Department for Infrastructure and Transport.
South Australia	- 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 are regulated under Road Traffic (Light Vehicle Standards) Rules 2018, administered by the Department of Planning, Transport and Infrastructure.
Tasmania	- 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	The key legislative instrument is the <i>Road Transport (Vehicle Registration) Regulation 2000</i>, implemented by Access Canberra.
Northern Territory	Vehicle performance standards are enforced under the <i>Motor Vehicles Act 1949</i> implemented by the Department of Transport.

Implementation issues arising

Table 2 summarises the implementation issues that arose throughout the 2019–20 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	No issues reported.
New South Wales	No issues reported.
Victoria	No issues reported.
Queensland	No issues reported.
Western Australia	No issues reported.
South Australia	The Regency Park Emissions Test Facility remained closed during the reporting period due to high maintenance costs and low throughput of vehicles.
Tasmania	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	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	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. The *Commonwealth Fuel Quality Standards Regulations 2019* commenced during the reporting period, in October 2019. The National Measurement Institute oversees the Fuel Quality Monitoring Program to ensure compliance with national fuel standards.

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. From July 2019, New South Wales regulates railway rolling stock operations, including requirements to manage air emissions. Several jurisdictions ran programs focusing on plant and equipment used by the construction industry.

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

A number of jurisdictions continued to note increases in the numbers of registered on- and off-road diesel vehicles resulting in them becoming an increasingly higher proportion of their in-service fleets. Fleet turnover, combined with the introduction of more stringent vehicle emissions regulations, means 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	132
Annex 2:	New South Wales	133
Annex 3:	Victoria	137
Annex 4:	Queensland	139
Annex 5:	Western Australia	141
Annex 6:	South Australia	144
Annex 7:	Tasmania	146
Annex 8:	Australian Capital Territory	148
Annex 9:	Northern Territory	150

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)

Amendment Dates: 15 October 2004, 4 November 2010, 21 November 2012

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 outlined in the NEPM: [National Environment Protection \(Movement of Controlled Waste between States and Territories\) Measure | nepc \(https://www.nepc.gov.au/nepms/movement-controlled-waste\)](https://www.nepc.gov.au/nepms/movement-controlled-waste).

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	The NEPM is implemented administratively.
New South Wales	The key legislative instruments are the <i>Protection of the Environment Operations Act 1997</i> and the <i>Protection of the Environment Operations (Waste) Regulation 2014</i>.
Victoria	The key legislative instruments are the Waste Management Policy (Movement of Controlled Waste between States and Territories) 2001 made under the <i>Environment Protection Act 1970</i>.
Queensland	- The key legislative instrument is the <i>Environmental Protection Act 1994</i>. - Requirements for the licensing of controlled waste transporters are included in the <i>Environmental Protection Regulation 2008</i>.
Western Australia	The primary legislative instruments are the <i>Environmental Protection Act 1986</i> and the <i>Environmental Protection (Controlled Waste) Regulations 2004</i>.
South Australia	The NEPM is implemented by the Environment Protection (Movement of Controlled Waste) Policy 2014 under the <i>Environment Protection Act 1993</i>.
Tasmania	The NEPM is implemented under the <i>Environmental Management and Pollution Control Act 1994</i>.
Australian Capital Territory	The key legislative instruments are the <i>Environment Protection Act 1997</i> and the <i>Environment Protection Regulations 2005</i>.
Northern Territory	The key legislative instruments are the <i>Waste Management and Pollution Control Act 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 led work on the National Waste Policy Action Plan's commitment to implement agreed national waste data, reporting and information sharing improvements. New South Wales led 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.

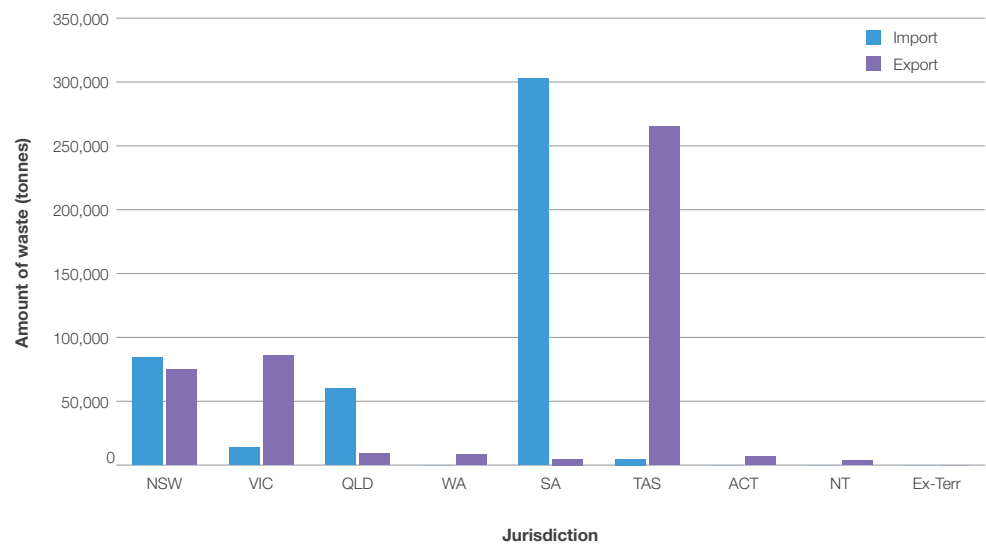
Table 2: Summary of total movements of controlled waste within Australia, imports by states and territories for the period 1 July 2019–30 June 2020

Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ex-Terr	Total
A	Plating & heat treatment	0.46	0.27	62.00	0.00	0.41	0.00	0.00	0.00	n/a	63.14
B	Acids	24248.55	28.88	71.13	0.00	32.81	0.00	0.00	0.00	n/a	24381.37
C	Alkalis	817.68	92.36	302.20	172.00	65.31	0.00	0.00	0.00	n/a	1449.55
D	Inorganic chemicals	22721.43	6877.43	2450.10	0.00	282265.14	5500.0	0.00	0.00	n/a	319814.10
E	Reactive chemicals	4.28	0.00	7.75	0.00	2.00	0.00	0.00	0.00	n/a	14.03
F	Paints, resins, inks, organic sludges	1498.38	162.03	1056.83	20.81	2354.89	0.00	0.00	0.00	n/a	5092.94
G	Organic solvents	386.72	179.92	1287.46	0.00	119.09	0.00	0.00	0.00	n/a	1973.19
H	Pesticides	7.46	41.54	360.04	0.00	0.50	0.00	0.00	0.00	n/a	409.54
J	Oils	24969.87	295.90	28572.49	111.97	1079.03	0.00	778.72	1103.26	n/a	56911.51
K	Putrescible/organic waste	8019.58	582.35	5918.63	122.84	0.00	0.00	7.60	0.00	n/a	14651.00
L	Industrial washwater	0.00	215.63	4.57	0.00	0.00	0.00	0.00	0.00	n/a	220.20
M	Organic chemicals	551.30	152.81	2888.72	32.00	111.25	0.00	0.00	0.00	n/a	3736.08
N	Soil/sludge	740.21	3243.17	12401.85	0.00	14571.94	0.00	55.14	0.00	n/a	31012.41
R	Clinical & pharmaceutical	632.69	315.61	2090.38	0.00	23.78	0.00	292.61	0.00	n/a	3355.07
T	Misc.	671.35	2358.88	3986.04	0.00	1692.62	0.00	0.00	0.00	n/a	8706.89
	Total (tonnes)	85269.96	14546.77	61460.19	459.62	302318.76	5500.00	1134.06	1103.26	n/a	471292.95

Table 3: Summary of total movements of controlled waste within Australia, exports by states and territories for the period 1 July 2019–30 June 2020

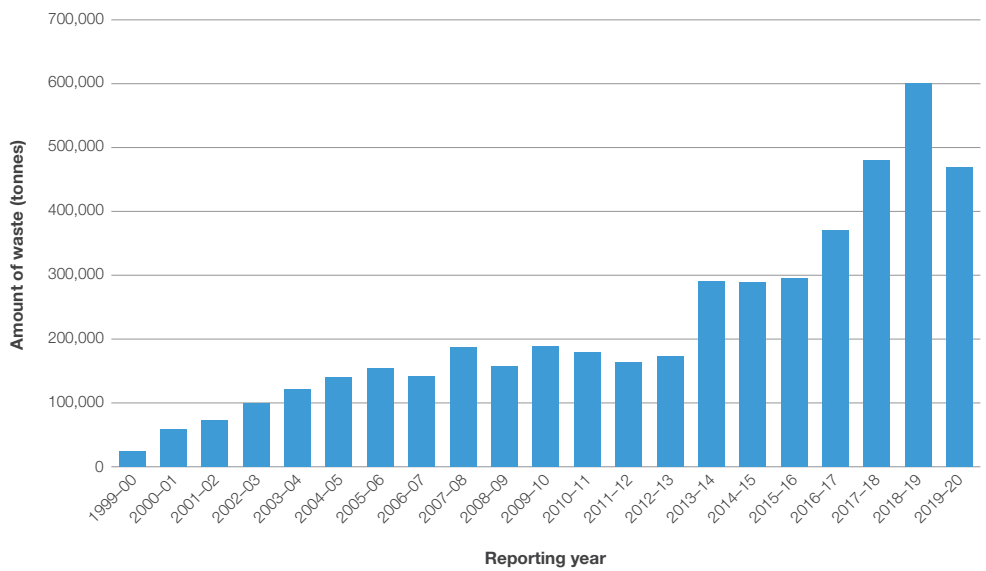
Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ex-Terr	Total
A	Plating & heat treatment	62.41	0.46	0.00	0.00	0.27	0.00	0.00	0.00	0.00	63.14
B	Acids	73.91	24194.67	44.37	9.58	20.30	8.00	0.07	30.45	0.00	24381.37
C	Alkalis	273.30	588.87	311.27	18.34	0.00	0.00	0.21	257.56	0.00	1449.55
D	Inorganic chemicals	14033.75	23872.10	5689.97	7610.88	1158.26	265828.52	183.02	1437.60	0.00	319814.10
E	Reactive chemicals	7.75	4.28	0.00	0.00	0.00	0.00	0.00	2.00	0.00	14.03
F	Paints, resins, inks, organic sludges	433.48	3924.63	451.49	47.00	1.83	0.00	158.29	76.22	0.00	5092.94
G	Organic solvents	1095.61	344.78	114.06	159.55	130.07	107.00	20.13	2.00	0.00	1973.19
H	Pesticides	273.41	53.48	1.45	12.60	61.25	0.00	0.00	7.35	0.00	409.54
J	Oils	27245.49	19282.46	729.24	1311.14	2123.05	88.20	3149.25	2982.41	0.00	56911.51
K	Putrescible/organic waste	6487.71	3354.35	42.58	0.00	0.00	0.00	4643.52	122.84	0.00	14651.00
L	Industrial washwater	204.18	0.00	13.02	0.00	0.00	3.00	0.00	0.00	0.00	220.20
M	Organic chemicals	2047.64	1100.74	435.24	0.47	0.00	7.00	29.30	14.40	0.00	3736.08
N	Soil/sludge	17408.48	10104.49	2320.21	34.93	612.55	0.00	208.60	24.44	0.00	31012.41
R	Clinical & pharmaceutical	2394.59	100.87	232.53	171.66	45.83	0.00	368.11	2.00	39.48	3355.07
T	Misc.	4546.38	901.10	101.99	2.00	1850.53	2.00	199.21	1105.68	0.00	8706.89
	Total (tonnes)	76588.09	88237.08	10477.52	9378.15	6003.94	266043.72	8959.71	6064.95	39.48	471292.95

Figure 1: Tonnage of controlled waste moved within Australia 2019–20*

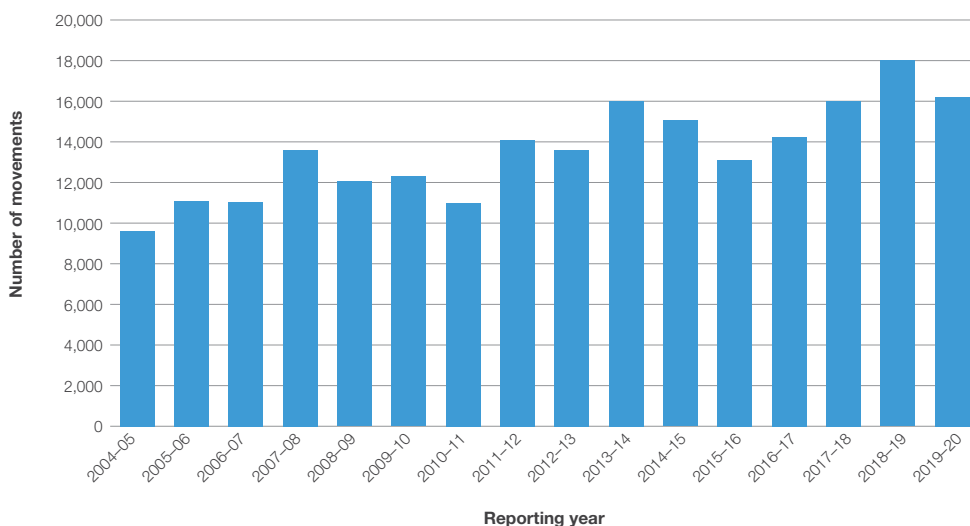


* Note: The scale of the vertical axis does not allow for the 39.48 tonnes of waste exported from Australia's External Territories to be visually represented.

Figure 2: Tonnage of controlled waste moved within Australia 1999–2020



* Note: Information regarding Australia's External Territories has been provided only since the reporting year 2009–10.

Figure 3: Number of movements of controlled waste within Australia 2004–20*

* Note: Information regarding number of movements has been provided only since the reporting year 2004–05 and information regarding Australia's External Territories has been provided only since the reporting year 2009–10.

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, it was noted that inconsistencies between jurisdictions (e.g. in terms of waste classification, waste codes, terminology) and outdated waste tracking systems may introduce data uncertainty.

There remains a good degree 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	154
Annex 2:	New South Wales	155
Annex 3:	Victoria	159
Annex 4:	Queensland	161
Annex 5:	Western Australia	164
Annex 6:	South Australia	167
Annex 7:	Tasmania	170
Annex 8:	Australian Capital Territory	172
Annex 9:	Northern Territory	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

Amendment Dates: 15 August 2007, 26 November 2008

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 outlined in the NEPM: [National Environment Protection \(National Pollutant Inventory\) Measure | nepc \(https://www.nepc.gov.au/nepms/national-pollutant-inventory\)](https://www.nepc.gov.au/nepms/national-pollutant-inventory).

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

Implementation issues arising

A summary of implementation issues arising during 2018–19 (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	- Released 2018–19 NPI data in March 2020. - Continued to lead and progress the review of the NPI.
New South Wales	The NPI online reporting system continues to result in 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	Continued concerns with NPI data quality and NEPM enforceability, which will be raised during the review.
Queensland	Will continue to raise opportunities to improve the effectiveness and implementation of the NPI during the review.
Western Australia	No issues reported.
South Australia	A detailed air emissions inventory continues to be a strategic priority for both the NPI and the SA EPA.
Tasmania	NPI funding and support is an ongoing issue, as is quality and timeliness of data provided.
Australian Capital Territory	No issues reported.
Northern Territory	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 is in place to 30 June 2021.

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 361,202 in 2018–19 to 392,408 in 2019–20 with 9,888 views of the NPI dataset on the <http://www.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, ensuring 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.

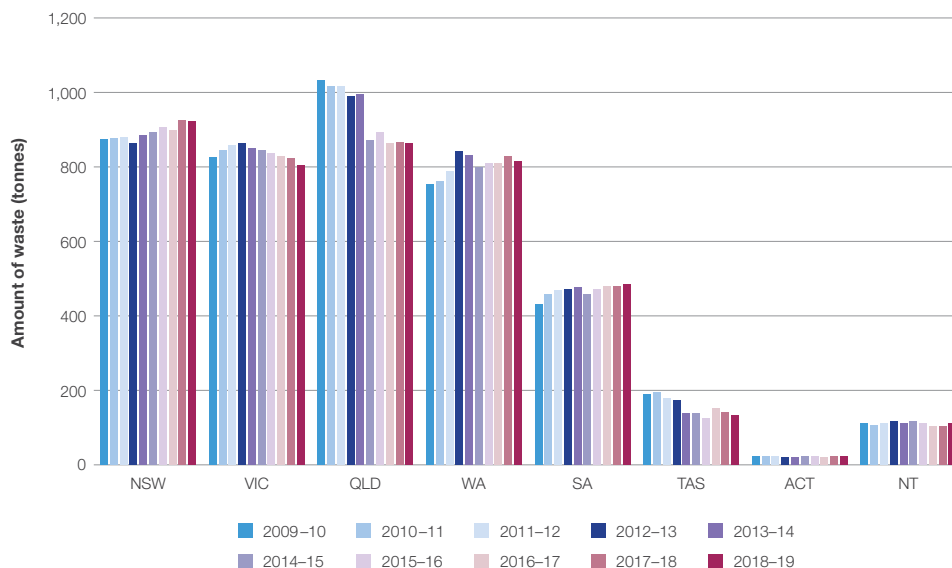
Most jurisdictions have conducted industry training programs to assist reporters to use the Online Reporting System. These training programs vary from one-on-one sessions with new reporters to more formal group sessions. There is a need for continued training due to turnover in industry, new small business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

Industry facility reporting

The Commonwealth published the 2018–19 National Pollutant Inventory (NPI) on 31 March 2020. The number of facilities reporting to the NPI decreased slightly from 4189 in 2017–18 to 4157 in 2018–19.

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 2009–10



PART 4—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 6:

Annex 1:	Commonwealth	180
Annex 2:	New South Wales	183
Annex 3:	Victoria	185
Annex 4:	Queensland	187
Annex 5:	Western Australia	189
Annex 6:	South Australia	191
Annex 7:	Tasmania	193
Annex 8:	Australian Capital Territory	194
Annex 9:	Northern Territory	195

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

Amendment date: 16 September 2011

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 outlined in the NEPM: [National Environment Protection \(Used Packaging Materials\) Measure | nepc \(https://www.nepc.gov.au/nepms/used-packaging\)](https://www.nepc.gov.au/nepms/used-packaging).

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	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	The NEPM is implemented by the Protection of the Environment Operations (Waste) Regulation 2014 (https://legislation.nsw.gov.au/view/html/inforce/current/sl-2014-0666).
Victoria	The NEPM is implemented by the Waste Management Policy (Used Packaging Materials) 2006, under the <i>Environment Protection Act 1970</i>.
Queensland	The NEPM is implemented by the <i>Waste Reduction and Recycling Regulation 2011</i>.
Western Australia	The NEPM is implemented by the <i>Environmental Protection NEPM-UPM) Regulations 2013</i> under the <i>Environmental Protection Act 1986</i>.
South Australia	The NEPM is legally enforced by the Environment Protection (Used Packaging Materials) Policy 2012 under the <i>Environment Protection Act 1993</i>.
Tasmania	The NEPM is a state policy under the <i>State Policies and Projects Act 1993</i>.
Australian Capital Territory	The NEPM will be implemented as a code of practice under the <i>Waste Management and Resource Recovery Act 2016</i>.
Northern Territory	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 (Covenant) slightly decreased in 2019–20 (1,422) from the previous reporting year (1,467).

All jurisdictions have initiated a process, including a behaviour change program, to identify free riders and start them reporting on their obligations.

There were no individual issues reported by the jurisdictions so the summary of implementation issues arising 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 (APCO). 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 Covenant.

Table 2: Covenant signatories at 30 June 2020, as reported by states and territories.

ACT	8
NT	1
NSW	673
QLD	126
SA	83
TAS	19
VIC	545
WA	102
TOTAL	1557

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 Australian Packaging Covenant were undertaken ahead of the release of the new Covenant in 2017, including changes to the Covenant's governance structure and funding arrangements. As a result, the reporting methodology for the new covenant is evolving and the Australian Packaging Covenant Organisation (APCO) is working to refine the process.

According to information provided by APCO, there were 1422 covenant signatories at the end of June 2020, of which 97.05% were compliant. This figure differs from the total provided in Table 2. It is acknowledged that data discrepancies may exist due to a lack of or inconsistency in data availability, collection, sharing and management protocols.

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.

PART 5—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 7:

Annex 1:	Commonwealth	198
Annex 2:	New South Wales	200
Annex 3:	Victoria	202
Annex 4:	Queensland	204
Annex 5:	Western Australia	205
Annex 6:	South Australia	206
Annex 7:	Tasmania	207
Annex 8:	Australian Capital Territory	210
Annex 9:	Northern Territory	212

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 from the Commonwealth, for the reporting year ended 30 June 2020.

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. 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.

Following internal consultations reviewing the need for the Air Toxics NEPM in 2018 and 2019, jurisdictions agreed that whilst the Air Toxics NEPM fulfils a useful role, it would benefit from further work. The National Clean Air Agreement 2021–2023 work plan is expected to include a project to further review the current state of air toxics in Australia and options for management.

Any potential changes to this NEPM would need to consider outcomes from the 2012 and 2019 reviews of the *National Environment Protection Council Act 1994* and the outcome of the Conran Review of COAG Councils and Ministerial Forums.

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 the Environment, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The implementation of the National Environment Protection (Air Toxics) Measure (NEPM) in New South Wales 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. New South Wales completed the desktop analysis and reported the results in the implementation report for the reporting year ended 30 June 2005.

Under Part 3, Clause 9 of the NEPM, monitoring of air toxics is required at Stage 2 sites (i.e. sites prioritised for monitoring based on the potential for significant population exposure). 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

Overview

New South Wales previously 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

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

The Turrella 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 are reproduced below. These summarise the monitoring results for the five air toxics – benzene, benzo(a)pyrene as a marker for polycyclic aromatic hydrocarbons, formaldehyde, toluene and xylenes.

These results clearly show that the 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.

NSW Air Toxics Monitoring Results 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.

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(a)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 2020.

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 2019 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 2019, 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 2019, 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 the 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 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In Queensland, the Air Toxics NEPM (AT NEPM) is implemented under the *Environmental Protection Act 1994* (EP Act), the *Environmental Protection Regulation 2008*, and the Environmental Protection (Air) Policy 2019, with the NEPM monitoring investigation levels incorporated as air quality objectives.

During 2019, 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.

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 an alternative DOAS technique at its ambient air quality monitoring network sites in South East Queensland (Springwood) and in central Gladstone. Although the DOAS monitoring methodology is not in accordance with the protocols set out in the AT NEPM and the monitoring sites are not identified as Stage 2 sites, the data collected improves DES' knowledge of ambient concentrations of most toxic pollutants in Schedule 1 of the AT NEPM.

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

Identification of Sites

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

Reporting of Monitoring of Air Toxics

During 2019, ambient monitoring of benzene, toluene, xylenes and formaldehyde using DOAS instrumentation continued in South East Queensland (Springwood) and central Gladstone.

Monitoring results from South East Queensland and Gladstone monitoring sites for the 2019 calendar year are provided in Tables 2–5 below. These results indicate that levels of air toxics were well below the AT NEPM investigation levels.

Table 1: Monitoring Results for Benzene

	Springwood	Central Gladstone
Air Toxic	Benzene	Benzene
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/19 to 31/12/19	1/1/19 to 31/12/19
Number of valid results	355	146
Maximum 24-hour average concentration	0.0018 ppm	0.0023 ppm
Annual average concentration (as arithmetic mean)	0.0010 ppm	0.0013 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0003 ppm	0.0003 ppm
Number of times monitoring investigation level exceeded	0	0

Table 2: Monitoring Results for Toluene

	Springwood	Central Gladstone
Air Toxic	Toluene	Toluene
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/19 to 31/12/19	1/1/19 to 31/12/19
Number of valid results	347	204
Maximum 24-hour average concentration	0.0063 ppm	0.0065 ppm
Annual average concentration (as arithmetic mean)	0.0017 ppm	0.0020 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0008 ppm	0.0008 ppm
Number of times monitoring investigation level exceeded	0	0

Table 3: Monitoring Results for Xylenes

	Springwood	Central Gladstone
Air Toxic	Xylenes	Xylenes
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/19 to 31/12/19	1/1/19 to 31/12/19
Number of valid results	358	212
Maximum 24-hour average concentration	0.0131 ppm	0.0263 ppm
Annual average concentration (as arithmetic mean)	0.0072 ppm	0.0077 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0019 ppm	0.0036 ppm
Number of times monitoring investigation level exceeded	0	0

Table 4: Monitoring Results for Formaldehyde

	Springwood	Central Gladstone
Air Toxic	Formaldehyde	Formaldehyde
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/19 to 31/12/19	1/1/19 to 31/12/19
Number of valid results	313	240
Maximum 24-hour average concentration	0.0259 ppm	0.0064 ppm
Annual average concentration (as arithmetic mean)	0.0054 ppm	0.0041 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0044 ppm	0.0008 ppm
Number of times monitoring investigation level exceeded	0	0

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

From the monitoring results for the 2019 reporting period, together with past results, there is no evidence that the AT NEPM monitoring investigation levels would be exceeded in ambient air in Queensland. No specific management actions to reduce air toxics concentrations have been implemented.

Repeat Identification of Stage 1 and Stage 2 Sites

Campaign monitoring only of benzo(a)pyrene concluded on 05/06/2018 and was reported in the 2018–19 Air Toxics Implementation report. Benzo(a)pyrene levels have been well within the AT NEPM monitoring investigation level in all of the various campaign monitoring episodes, so there is no trigger for continued monitoring at this point in time.

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 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

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

Air toxics emissions are also managed through the Perth Air Quality Management Plan (AQMP), a whole-of-government plan aimed at improving and maintaining Perth's air quality. 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, studies are required to determine major sources and concentrations of air toxics in the region. The initiatives within the AQMP are complementary to the NEPM.

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 several objectives to be satisfied when developing and implementing the monitoring programs. Therefore, 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 has been published and is available at www.der.wa.gov.au/our-work/programs/460-perth-air-emissions-study-2011-2012. The inventory includes air toxics and provides additional information for identifying and prioritising air toxics sources in this area.

Reporting of Monitoring of Air Toxics

The results of NEPM-compliant monitoring as well as the additional complementary air quality studies in 2007–08 and 2009 indicated that air toxics levels in Perth are low compared to international standards and below NEPM monitoring investigation levels. These studies have been published in the *Background Air Quality Monitoring in Kwinana 2005–10* technical report, which is available on the DWER website at www.der.wa.gov.au. 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 also met the ranking criteria for polycyclic aromatic hydrocarbons. 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 2020.

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 the Hon Roger Jaensch Minister for the Environment and Parks, for the reporting year ended 30 June 2020.

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 of the Department of Primary Industries, Parks, Water and 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. Due to budgetary constraints air toxics monitoring was discontinued in 2011. No air toxics monitoring was undertaken in Tasmania during the reporting year ending 30 June 2020.

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, 14 stage 2 sites were identified in a Desktop Analysis conducted in accord with the Air Toxics NEPM Desktop Analysis protocol.

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

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

- domestic 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.

Due to budgetary constraints, no air toxics monitoring was conducted in Tasmania during the 2019–2020 period. Consequently, the monitoring requirements for the Air Toxics NEPM must be evaluated as “not demonstrated” for the 2019 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 ACT by Rebecca Vassarotti MLA, Minister for the Environment, for the reporting year ended 30 June 2020.

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, for the reporting year ended 30 June 2020.

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*.

No implementation activities were conducted in 2019–20.

One NT company conducted air toxics monitoring for benzene, toluene and xylenes at the NT EPA air quality monitoring stations as part of its environment protection licence requirements.

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 2019–20, no sites were evaluated or selected, and no analyses were performed for NEPM reporting.

The NT EPA has provided responses to the ongoing NEPM review 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 from the Commonwealth, for the reporting year ended 30 June 2020.

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.

The endorsed work plan under the Agreement for 2018 to 2020 included work to review and strengthen the Ambient Air Quality standards for ozone, nitrogen dioxide and sulfur dioxide. Over 18,000 submissions were received during the public consultation process on draft standards which took place from May 2019. The COVID-19 pandemic prevented Environment Ministers from meeting in early 2020. Any decision to endorse the new standards will be deferred to a later meeting.

The Black Summer bushfires of December/ January 2019–20 were a significant air quality event for major population centres in Eastern and Southern mainland Australia. The fires lasted many weeks, with fine and coarse particulates regularly at hazardous levels. Under the NEPM, bushfires are considered exceptional events. Accordingly, for compliance purposes the high pollutant levels during this period are not counted as exceedances.

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

The National Measurement Institute (NMI) conducts monitoring, compliance and enforcement activities, to detect and respond to non-compliance under the *Fuel Quality Standards Act 2000* (the Act) and Fuel Quality Standards Regulations 2019.

NMI officers visited 274 retail fuel sites during 2019–20 as part of the Fuel Quality Monitoring Program. Where they detected non-compliance, the NMI took action to ensure fuel supplied complied with the requirements of the Act.

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 particulate matter (PM_{2.5} 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.

The bushfires over the December – January 2019–20 period were major pollution events for most of the eastern seaboard. Inconsistency between jurisdictions in how health advice corresponded to pollutant thresholds, along with concerns regarding the usefulness of data reported in line with 24 hour averaging conventions, led to a call for a nationally consistent measurement and communications regime across all jurisdictions. Work has commenced on nationally consistent air quality information and health advice to be applied across Australia. This work is being undertaken by representatives from different jurisdictions in the Environmental Health Standing Committee (enHealth).

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 2020.

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 Act 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 develops policies and programs to improve compliance with NEPM goals and protect public health and operates a comprehensive air quality monitoring network and undertakes air quality forecasting to provide timely information so people can reduce their risk of exposure. The EPA develops and implements regulation, conducts compliance activities and provides expert technical advice on air quality issues. Both agencies work closely with stakeholders to inform, educate and involve stakeholders in improving air quality management.

Air quality in NSW in 2019–20 was greatly affected by intense drought conditions and unprecedented extensive bushfires, resulting at times in poorer air quality throughout the state.

The NEPM goal is a driver for air quality management 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

DPIE and the EPA deliver 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 2020, DPIE operated 92 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 2019–20.

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 Inventory is created retrospectively based on collected and modelled data from a broad range of government, industry, commercial, household and technical sources. The latest available inventory for the 2013 calendar year was finalised in December 2019.

Detailed inventory data are available in a technical report on the 2013 Calendar Year Air Emissions Inventory webpage (<http://www.epa.nsw.gov.au/your-environment/air/air-emissions-inventory/air-emissions-inventory-2013>). The 2013 inventory data is also available in two Excel workbooks.

The community can access inventory information about local sources of air pollution via the Air Emissions in my Community web tool (<http://www.epa.nsw.gov.au/air/airemissionsinmycommunity.htm>). The tool presents aggregated data and charts for different geographic areas within the GMR, down to local council and postcode level. The Community web tool was also updated in 2019, and inventory data for the 2003, 2008 and 2013 inventories can now be shown and the trends over the 10-year period spanning the three inventories displayed.

Air quality monitoring

At 30 June 2020, the NSW air quality monitoring network totalled 92 stations, consisting of 53 National Association of Testing Authorities (NATA) accredited stations plus 39 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 92-station network. The AAQ NEPM air quality monitoring network consisted of monitoring stations at 32 sites at 30 June 2020. This includes 23 sites in the Greater Metropolitan Region (16 in Sydney, three in the Illawarra region, three in the Lower Hunter, one in the Central Coast) and nine in regional NSW (three in the North-West Slopes, two in the Central Tablelands, two in the South-West Slopes and one each in the Northern Tablelands and Southern Tablelands regions).

The remaining 60 network stations were not designated for AAQ NEPM reporting in 2019. These non-NEPM stations comprised the 39 indicative monitoring sites in the NSW rural air quality network and 21 NATA-accredited air quality monitoring stations (14 sites in the industry-funded Upper Hunter network, three sites in the industry-funded Newcastle local area network, two sites on the Mid-North Coast at Port Macquarie and Coffs Harbour, one site at Cook and Phillip Park in Sydney CBD, and one roadside monitoring site at Bradfield Highway in Milsoms Point). 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 further extended across the NSW Air Quality Monitoring Network in 2019–20. 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 2019, new monitoring stations commenced operation in Goulburn in regional NSW, and at Cook and Phillip Park in Sydney CBD. During 2019–20, the number of rural network sites which provide indicative information on both PM_{2.5} and PM₁₀, apart from total suspended particles (TSP), increased from five to 33 sites.

This involved an upgrade of 24 current sites, and establishment of four new sites resulting from monitoring undertaken during the 2019–2020 bushfires.

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 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.

Deployment of emergency monitoring was a major factor in responding to air quality issues arising from the significant bushfire emergency which impacted NSW in the 2019–20 bushfire season. One pod was deployed to Port Macquarie in late-July to monitor air quality impacts from an underground peat fire, which later contributed to bushfires in the region. Due to the increasing intensity of the bushfires, a small station and a pod were deployed in Coffs Harbour and Lismore respectively in November 2019. Additionally, due to the availability of indicative sensors being tested for the rural network upgrade, seven emergency sites were established during the summer. Three of these were deployed on the North Coast in November (Grafton, Taree, Coffs Harbour), two on the South Coast in December 2019 (Batemans Bay and Ulladulla), and one each on the far South Coast (Merimbula) and Snowy Mountains (Cooma) in January 2020.

As of 30 June 2020, both the Port Macquarie and Coffs Harbour sites are being maintained, while a permanent location for one or both sites is investigated. Indicative monitors were maintained at four locations and are currently incorporated into the rural network (Lismore and Grafton in the Northern Rivers, Merimbula on the South Coast, and Cooma in the Snowy Mountains). 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 needs and the objectives of the AAQ NEPM. With ongoing inquiries into the management of bushfires, including smoke and health impacts, and the importance of incorporating the outcomes of these inquiries into the monitoring plan, it is anticipated that an updated plan will be released in early 2021.

Blue Mountains and Lithgow Air Watch

Blue Mountains and Lithgow Air Watch (www.epa.nsw.gov.au/your-environment/air/regional-air-quality/Blue-Mountains-and-Lithgow-air-watch) was a 12-month, EPA-led, local air quality monitoring project established to provide a better picture of air quality in the region. The project began in May 2019 and concluded in May 2020. Air Watch was undertaken in partnership 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.

Air Watch comprised:

- One air quality monitoring station located at Katoomba, which measured particles (PM₁₀ and PM_{2.5}), sulfur dioxide, carbon monoxide, ozone, oxides of nitrogen, visibility and meteorology. Monitoring was undertaken in accordance with Standards Australia methods and can be compared to the national AAQ NEPM standards.
- Twelve low cost sensors, known as KOALAs (Knowing Our Ambient Local Air-Quality), were located at schools and businesses in Wentworth Falls, Springwood, Katoomba and Lithgow. The KOALAs are indicative instruments and measure particles (PM_{2.5}, PM₁₀) and carbon monoxide (CO) in real time, demonstrating trends in air quality only.

The data was available in near real time with links from the EPA's website.

Quarterly reports of the data: Winter, Spring, Summer and Autumn, have been published on the EPA's website. They show that air quality within the Blue Mountains and Lithgow area is generally of good quality outside of natural events such as bushfire and dust storms. The final project interpretation report, analysing the full 12 months of data is due in September 2020, and expected to be published on the EPA's website in late 2020.

Air emissions and health impacts research

Broken Hill Environmental Lead Study

The Broken Hill Environmental Lead Study continued in 2019–20, with sampling concluding in March 2020. This four-year study was commissioned by the Broken Hill Environmental Lead Program (BHELP) 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 air quality, exposure and health impact modelling capabilities were established during the study. The initial results from the Sydney Air Quality Study were published in 2019 in a peer reviewed journal and the study report is under final review and expected to be delivered in the second half of 2020. 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 of and enhance 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. A trajectory and dispersion modelling system has been in operation for NSW. This system, named HYSPLIT in NSW, has produced daily plume forecasts since July 2019. During the 2019–2020 bushfire season, major improvements were made in smoke emissions modelling to better characterise smoke impacts from the unprecedented scale of wildfires on regional air quality. See: www.environment.nsw.gov.au/topics/air/research/current-research/air-quality-forecasting.

Industry emissions

In 2019–20, the EPA continued to implement its regulatory responsibilities, including licensing scheduled industry activities and conducting compliance and enforcement programs. The Act, 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 2019–20, the EPA continued to progress a review of the LBL scheme, which aims to improve the scheme's efficiency and effectiveness.

Coal Fired Power Stations

In 2017–18 the EPA completed a detailed compliance review of Coal Fired Power Stations Air Emissions and Monitoring (www.epa.nsw.gov.au/your-environment/air/industrial-emissions). The review involved detailed analysis of large amounts of monitoring data and operating information. In 2019–20 the EPA continued to work with power station licensees to further standardise and strengthen environmental licence conditions and consulted with industry on proposed environment protection licence variations. All power station licences were varied in July 2020. The licence variations tighten emission limits and require more rigorous monitoring and reporting.

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 (www.epa.nsw.gov.au/air/150038DieselStrategy.htm).

In 2019–20 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 (<https://www.environment.nsw.gov.au/>).

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

Amendments to the Act to regulate railway rolling stock operations, in addition to railway infrastructure operators, 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.

During 2019–20, the EPA developed the conditions of the licences following extensive consultation with the rail industry and input from community and other relevant stakeholders. The licences were issued in August 2020.

Vehicle and fuel emissions

Regulation of motorway tunnel ventilation stacks

In July 2019, the Act was amended to include changes to the way that road tunnel ventilation stacks are regulated. From 5 March 2020 motorway tunnel ventilation stack environment protection licences place strict operating requirements on air emissions from ventilation stacks. The licences also require air quality monitoring of tunnel ventilation stacks, and the monitoring data to be publicly available through tunnel operators' websites and provided to the EPA for review. As part of its regulatory role the EPA undertakes compliance activities to ensure ventilation stacks are operated according to the licence conditions.

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 183 smoky vehicle reports are received each month from the public (more than 2,200 public reports over the year), indicating a high level of awareness in the community of the unacceptability of excessive visible emissions.

In 2019–20, the EPA issued 804 advisory letters based on public reports, of which 621 advisory letters were to diesel vehicle owners.

In addition, 49 defective vehicle notices were issued in 2019–20 of which 38 were for 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.

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, transitioned from the EPA to local councils in 2017. At that time, 99 per cent of petrol service stations required to have VR1 equipment installed and operating were compliant and 98 per cent of petrol service stations required to install VR2 equipment were compliant.

Implementation of vapour recovery at these service stations has reduced emissions of volatile organic compounds (VOCs) by an estimated 5750 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 4000 tonnes each summer.

National vehicle and fuel standards

Fuel quality and vehicle emission standards for new road vehicles are managed by the Commonwealth Government. In 2017, NSW made submissions to the Commonwealth supporting early introduction of tighter national vehicle emission and fuel standards. These proposed standards would more closely harmonise with international best practice for national vehicle emissions and fuel quality standards and will improve health outcomes. The impact of improved emission and fuel standards over time is detailed in the 2018 report *Trends in Motor Vehicle Emissions* (www.chiefscientist.nsw.gov.au/_data/assets/pdf_file/0007/192490/TP01_Trends-in-Motor-Vehicles-and-Their-Emissions.pdf).

Wood smoke management

The EPA supports local 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 (www.epa.nsw.gov.au/your-environment/air/reducing-wood-smoke-emissions/council-resource-kit). 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.

The EPA also regulates the sale of wood heaters. All appliances must meet minimum emission and efficiency standards as set out in the *Protection of the Environment (Clean Air) Regulation 2010*. From 1 September 2019, all new wood heaters sold in NSW must comply with tighter efficiency and emission standards under Australia/New Zealand Standards ASNZS2012 and ASNZS2013.

Hunter region coal mines dust management

Throughout spring and summer 2019–20, the EPA implemented Operation *Bust the Dust* to ensure that open cut coal mines in the Upper Hunter minimised particle emissions. The EPA inspected mines on days most likely to have adverse weather conditions, using Bureau of Meteorology weather predictions. Using drones, most mines were observed implementing best practice dust controls, however, due to the extremely hot, dry and windy weather, dust was observed blowing off exposed areas of mine sites. During the program excessive dust was generated in the Hunter Valley on 10 days, this was a 50 per cent reduction on earlier drought impacted years from 2012 to 2014.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Data in this section are presented for the 2019 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 2019, the NSW NEPM reporting network comprised 32 air quality monitoring stations, compared with 28 in 2018. The 32 stations comprised 16 in Sydney, one in the Central Coast, three in the Illawarra, three in the Lower Hunter and nine in regional New South Wales. Data were reported for 26 of 32 monitoring stations which met the requirement for at least 75 per cent data availability for all criteria pollutants measured at those sites.

Four stations recorded less than 75 per cent data availability for at least one pollutant over any three-month period. Two stations were established during 2019, and therefore had less than 75 per cent data availability.

The drought and bushfires which impacted Australia during 2019 had significant impacts on air quality in New South Wales. This led to a significantly higher number of ozone exceedances in 2019 than in any previous reporting year, as well as a higher number of daily exceedances (both exceptional and non-exceptional) for particles as PM_{10} and $PM_{2.5}$. The annual averages for $PM_{2.5}$ and PM_{10} were also significantly higher than in previous years for almost all sites.

During 2019, NEPM goals were met for carbon monoxide and sulfur dioxide, which all remained well below NEPM standards. Nitrogen dioxide goals were met at all sites, noting a single allowable hourly exceedance of nitrogen dioxide at the Goulburn site, which resulted from direct bushfire smoke impact.

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 2016 confirmed the low levels of lead in ambient air.

Ozone

25 stations in the NEPM network monitored ozone in 2019, compared with 23 in 2018. 23 stations met 75 per cent data availability.

During 2019, of the 25 sites at which ozone was monitored, one site, Albion Park South in the Illawarra region, met both national ozone standards and goals. All other sites recorded between two and 18 exceedance days of either or both ozone standards. Most of these exceedances occurred between October and December, associated with hot and dry weather conditions and significant impact of pollutant emissions from bushfires.

For nine stations in western Sydney, in contrast, two or more ozone exceedance days were recorded in January and February, not associated with bushfire impact, but associated with typical ozone conducive weather conditions observed in the GMR.

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 (NO_x) and volatile organic compounds (VOCs). Bushfires are a known source of ozone precursors and can contribute to ozone exceedances in NSW. 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, as well as impacts from incidental emissions such as bushfire smoke. The current NEPM standard for ozone does not differentiate the impact of bushfire smoke as an exceptional event, in contrast to the particle standards.

Detailed compliance information is provided below.

- *Ozone one-hour standard*

The NEPM one-hour standard was exceeded on sixteen calendar days in 2019, eight days during January 2019 in western Sydney; and eight days between October and December 2019 during the 2019–20 bushfires across all regions where ozone was measured, except at Gunnedah in the Northwest Slopes.

21 of 25 stations exceeded the one-hour standard: two stations on one allowable exceedance day and 19 stations with between two and 11 exceedance days.

- *Ozone one-hour goal*

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

Six of 25 stations met the NEPM one-hour ozone goal: four stations with no exceedance days and two stations with one allowable exceedance day.

19 of 25 stations did not comply with the NEPM one-hour ozone goal. All 16 stations in Sydney were non-compliant, as were Goulburn in the Southern Highlands and Newcastle and Wallsend in the Lower Hunter.

- *Ozone four-hour standard*

The NEPM four-hour standard was exceeded on 31 calendar days in 2019. Ten calendar days occurred during January and February 2019 in western Sydney. The other 21 days occurred between October and December 2019 across regions where ozone was measured, due to the impact of smoke from bushfires.

24 of 25 stations exceeded the four-hour standard, with two to 18 days measured at any given station. Only Albion Park South in Illawarra recorded no exceedances during 2019.

- *Ozone four-hour goal*

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

Only one of 25 stations met the NEPM four-hour ozone goal: Albion Park South in Illawarra which recorded no exceedance days.

The other 24 stations did not comply with the NEPM four-hour ozone goal.

Particles

In summary, PM_{10} and $PM_{2.5}$ levels increased significantly at all measurement locations across the state in 2019. The major influence on elevated particle pollution was from the bushfires during the 2019–20 spring and summer seasons, with the smoke impacting air quality across all of NSW during this period. Widespread dust storms were another factor having significant impact on air quality during the year, primarily due to drought and low rainfall which resulted in poor ground cover in central and western parts of the state, leading to raised dust levels under higher winds. Other influences which led to elevated particle concentrations on specific days during the year were hazard reduction burning, wood smoke from domestic heating, and relatively smaller bushfires which occurred in far north and south of the state in early 2019.

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}

32 stations in the NSW NEPM air quality monitoring network monitored PM_{10} levels in 2019, compared with 28 in 2018. 29 stations met 75 per cent data availability.

- *PM_{10} 24-hour standard*

The PM_{10} 24-hour standard was exceeded on 129 calendar days in 2019.

Events on 110 days were attributable to exceptional events. The major causes were widespread dust storms, which occurred in eight out of 12 months during the year, and smoke during the 2019–20 bushfires which contributed to exceedances on at least 64 days. There were multiple days where both bushfire smoke and widespread dust storms contributed to particle exceedances at the same location. Between January and March 2019, in the previous bushfire season, there were seven days where bushfire smoke was a contributor to exceedances. During cooler months, there were 10 days where hazard reduction burns were a contributing factor.

There were 34 occasions where non-exceptional events were noted due to particles from local sources at a given site. Most of these were related to elevated dust levels which were not directly attributable to continental-scale dust events. The number of these was increased compared to previous years due to impact of drought on local or regional sources, particularly at Wagga Wagga in regional NSW.

The categorisation of what constituted a continental-scale dust event was challenging in 2019. This was because the frequency by which normal wind direction changes and wind fronts, which progress (as they normally do) across the entire state, was much higher compared to previous years, leading to exceedances due to raised dust at multiple locations.

Eight stations exceeded the PM_{10} 24-hour standard due to non-exceptional particle events from local sources: Liverpool and Oakdale in Sydney South-west, Wagga Wagga North and Albury in the Riverina region, Kembla Grange in the Illawarra region, Bathurst and Orange in the Central Tablelands and Tamworth in the North-west Slopes.

- *PM_{10} 24-hour goal*

21 of 29 stations met the 24-hour PM_{10} goal of zero exceedances excluding exceptional events. Eight 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. Three stations did not comply as they did not have sufficient coverage during 2019.

- *PM_{10} annual standard*

18 of 29 stations recorded annual average concentration below the annual standard of $25.0 \mu\text{g}/\text{m}^3$. There is no applicable goal for the annual standard which is reported as all measured data including exceptional events.

In the GMR there were six stations which exceeded the annual standard: Liverpool, Parramatta North and Prospect in Sydney, Beresfield and Newcastle in the Lower Hunter, and Kembla Grange in Illawarra.

In regional NSW, five of the eight stations exceeded the annual standard including Armidale in the Northern Tablelands, Bathurst and Orange in the Central Tablelands and Tamworth in the North-West Slopes. Wagga Wagga North in the South-West Slopes recorded the highest annual average of $35.3 \mu\text{g}/\text{m}^3$.

Particles as $PM_{2.5}$

32 stations in the NSW NEPM air quality monitoring network monitored $PM_{2.5}$ levels in 2019, compared with 28 in 2018. 27 stations met 75 per cent data availability.

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

The $PM_{2.5}$ 24-hour standard was exceeded on 116 calendar days in 2019.

The 2019–20 bushfires contributed to 69 exceedance days between 12 September and 31 December, including the last 51 days of the year consecutively starting from 11 November. In contrast, the 2018–19 bushfires led to only four exceedances in 2019, one in Narrabri and three in Albury. Hazard reduction burns also contributed to exceedances of the 24-hour standard in the GMR, as well as the South-west Slopes and Central Tablelands, between April and August.

Non-exceptional particle events were observed at four sites due to smoke generated by domestic wood heating. Two of these sites, Armidale and Orange, reported against the NEPM for the first time in 2019 (established in 2018–19).

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

23 of 27 stations met the NEPM 24-hour $PM_{2.5}$ goal of zero exceedances excluding exceptional events.

Four stations did not meet the goal, with all non-exceptional exceedance days affected by woodsmoke generated from domestic wood heating. These occurred on 24 days at Armidale in the Northern Tablelands, four days at Orange in Central Tablelands, two days at Gunnedah in the North-west Slopes and one day at Liverpool in Sydney South-West.

- *$PM_{2.5}$ annual standard*

Only one of 27 stations, Narrabri, recorded an annual average concentration ($7.8 \mu\text{g}/\text{m}^3$) below the $8 \mu\text{g}/\text{m}^3$ standard. The other 26 stations recorded annual averages ranging from $9.213.2 \mu\text{g}/\text{m}^3$ in the GMR to $10.1\text{--}17.2 \mu\text{g}/\text{m}^3$ in regional NSW, with Armidale measuring the highest annual average. There is no applicable goal for the annual standard which is reported as all measured data including exceptional events.

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 per cent 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 24-hour 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 www.dpie.nsw.gov.au/air-quality/current-air-quality.

Current and historical data is searchable and downloadable from www.dpie.nsw.gov.au/air-quality/air-quality-data-services/data-download-facility.

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

CO Carbon monoxide

(NEPM standard rolling 8 hour = 9.0 ppm)

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
Rouse Hill*	0	ND
Rozelle	0	Met
Central Coast		
Wyang	0	Met
Illawarra		
Wollongong	0	Met
Lower Hunter		
Newcastle	0	Met

ND – Not Demonstrated

* Rouse Hill station established in May 2019

NO₂

Nitrogen Dioxide

(NEPM standard: 1 hour = 0.120 ppm, 1 year = 0.030 ppm)

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	0.005	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	0.005	Met
Oakdale	0	Met	0.002	Met
Parramatta North	0	Met	0.010	Met
Prospect	0	Met	0.009	Met
Randwick	0	Met	0.007	Met
Richmond	0	Met	0.005	Met
Rouse Hill*	0	ND	-	ND
Rozelle	0	Met	0.010	Met
St Marys	0	Met	0.004	Met
Central Coast				
Wyang	0	Met	0.004	Met
Illawarra				
Albion Park South	0	Met	0.004	Met
Kembla Grange	0	Met	0.005	Met
Wollongong	0	Met	0.006	Met
Lower Hunter				
Beresfield	0	Met	0.008	Met
Newcastle	0	Met	0.008	Met
Wallsend	0	Met	0.007	Met
Regional NSW				
Goulburn**	1	ND	-	ND
Gunnedah	0	Met	0.005	Met

ND – Not Demonstrated
* Rouse Hill site established in May 2019
** Goulburn site established in November 2019

O₃ Ozone

(NEPM standard: 1 hour = 0.100 ppm, Rolling 4 hour = 0.080 ppm)

Station	1 Hour		Rolling 4 Hour	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Sydney				
Bargo	6	Not Met	15	Not Met
Bringelly	7	Not Met	17	Not Met
Camden	11	Not Met	17	Not Met
Campbelltown West	9	Not Met	18	Not Met
Chullora	2	Not Met	4	Not Met
Earlwood	2	Not Met	4	Not Met
Liverpool	4	Not Met	9	Not Met
Macquarie Park	2	Not Met	4	Not Met
Oakdale	7	Not Met	13	Not Met
Parramatta North	2	Not Met	10	Not Met
Prospect	4	Not Met	10	Not Met
Randwick	2	Not Met	5	Not Met
Richmond	4	Not Met	8	Not Met
Rouse Hill*	2	Not Met	5	Not Met
Rozelle	2	Not Met	4	Not Met
St Marys	8	Not Met	14	Not Met
Central Coast				
Wyang	0	Met	3	Not Met
Illawarra				
Albion Park South	0	Met	0	Met
Kembla Grange	0	Met	2	Not Met
Wollongong	1	Met	2	Not Met
Lower Hunter				
Beresfield	1	Met	4	Not Met
Newcastle	2	Not Met	2	Not Met
Wallsend	2	Not Met	4	Not Met
Regional NSW				
Goulburn**	2	Not Met	4	Not Met
Gunnedah	0	Met	2	Not Met

* Rouse Hill site established in May 2019

** Goulburn site established in November 2019

SO₂

Sulfur dioxide

(NEPM standard: 1 hour = 0.200 ppm, 1 day = 0.080 ppm, 1 year = 0.020 ppm)

Station	1 hour		1 day		1 year	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Sydney						
Bargo	0	Met	0	Met	0.000	Met
Bringelly	0	Met	0	Met	0.001	Met
Campbelltown West**	0	ND	0	ND	-	ND
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	0	Met	0	Met	0.001	Met
Randwick	0	Met	0	Met	0.001	Met
Richmond	0	Met	0	Met	0.000	Met
Rouse Hill*	0	ND	0	ND*	-	ND
Rozelle	0	Met	0	Met	0.001	Met
Central Coast						
Wyong	0	Met	0	Met	0.001	Met
Illawarra						
Albion Park South	0	Met	0	Met	0.001	Met
Wollongong	0	Met	0	Met	0.001	Met
Lower Hunter						
Beresfield	0	Met	0	Met	0.002	Met
Newcastle	0	Met	0	Met	0.001	Met
Wallsend	0	Met	0	Met	0.002	Met

ND – Not Demonstrated
* Rouse Hill site established in May 2019
** Campbelltown West site had <75% coverage for Q1

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

Station	1 day			1 year	
	Non-exceptional exceedance days	Total exceedance days	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Sydney					
Bargo	0	21	Met	21.2	Met
Bringelly	0	24	Met	23.6	Met
Camden	0	27	Met	22.5	Met
Campbelltown West	0	24	Met	22.3	Met
Chullora	0	20	Met	24.6	Met
Earlwood	0	17	Met	23.0	Met
Liverpool	1	28	Not Met	27.7	Not Met
Macquarie Park	0	16	Met	19.9	Met
Oakdale	1	28	Not Met	22.4	Met
Parramatta North	0	22	Met	25.5	Not Met
Prospect	0	25	Met	26.0	Not Met
Randwick	0	19	Met	24.1	Met
Richmond	0	28	Met	24.2	Met
Rouse Hill*	0	24	ND	-	ND
Rozelle	0	18	Met	22.7	Met
St Marys	0	26	Met	24.6	Met
Central Coast					
Wyong	0	19	Met	21.1	Met
Illawarra					
Albion Park South	0	14	Met	19.5	Met
Kembla Grange	2	21	Not Met	25.5	Not Met
Wollongong***	0	17	ND	-	ND
Lower Hunter					
Beresfield	0	30	Met	25.9	Not Met
Newcastle	0	29	Met	28.4	Not Met
Wallsend	0	21	Met	22.9	Met

ND – Not Demonstrated

* Rouse Hill site established in May 2019

*** Wollongong site had <75% coverage for Q2

PM₁₀

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

Station	1 day			1 year	
	Non-exceptional exceedance days	Total exceedance days	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Regional NSW					
Albury	2	25	Not Met	23.4	Met
Armidale	0	41	Met	27.9	Not Met
Bathurst	1	40	Not Met	27.4	Not Met
Goulburn**	0	24	ND	-	ND
Gunnedah	0	30	Met	24.8	Met
Narrabri	0	31	Met	23.2	Met
Orange	1	35	Not Met	28.3	Not Met
Tamworth	1	52	Not Met	33.7	Not Met
Wagga Wagga North	25	63	Not Met	35.3	Not Met

ND – Not Demonstrated
** Goulburn site established November 2019

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	
	Non-exceptional exceedance days	Total exceedance days	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Sydney					
Bargo	0	21	Met	10.4	Not Met
Bringelly	0	27	Met	11.3	Not Met
Camden	0	28	Met	11.8	Not Met
Campbelltown West***	0	27	ND	-	ND
Chullora***	0	18	ND	-	ND
Earlwood	0	22	Met	10.5	Not Met
Liverpool	1	32	Not Met	12.8	Not Met
Macquarie Park	0	18	Met	9.2	Not Met
Oakdale	0	28	Met	13.2	Not Met
Parramatta North	0	21	Met	10.5	Not Met
Prospect	0	25	Met	11.9	Not Met
Randwick	0	18	Met	10.8	Not Met
Richmond***	0	32	ND	-	ND
Rouse Hill*	0	24	ND	12.7	ND
Rozelle	0	21	Met	10.3	Not Met
St Marys	0	21	Met	9.8	Not Met
Central Coast					
Wyong	0	23	Met	10.5	Not Met
Illawarra					
Albion Park South	0	12	Met	8.6	Not Met
Kembla Grange	0	12	Met	8.8	Not Met
Wollongong	0	14	Met	9.0	Not Met
Lower Hunter					
Beresfield	0	23	Met	12.1	Not Met
Newcastle	0	26	Met	10.9	Not Met
Wallsend	0	19	Met	10.4	Not Met

ND – Not Demonstrated

* Rouse Hill site established in May 2019

*** Campbelltown West, Richmond and Chullora sites had <75% coverage for Q1, Q2 and Q4 respectively

PM_{2.5}

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

Station	1 day			1 year	
	Non-exceptional exceedance days	Total exceedance days	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Regional NSW					
Albury	0	19	Met	10.1	Not Met
Armidale	24	60	Not Met	17.2	Not Met
Bathurst	0	24	Met	11.3	Not Met
Goulburn**	0	28	ND	-	ND
Gunnedah	2	24	Not Met	11.2	Not Met
Narrabri	0	20	Met	7.8	Met
Orange	4	31	Not Met	15.8	Not Met
Tamworth	0	32	Met	14.4	Not Met
Wagga Wagga North	0	17	Met	11.3	Not Met

ND – Not Demonstrated
** Goulburn site established in November 2019

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 2020.

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 2.5 μm ($\text{PM}_{2.5}$), data capture was below the target of 75% at Alphington in quarter 4 (Q4) due to an instrumentation fault. Data capture was above 75% at all other stations.
- For particulate matter equal or less than 10 μm (PM_{10}), data capture was below the target of 75% at Footscray in quarter 4 (Q4) due to an instrumentation fault. Data capture was above 75% at all other stations.
- For carbon monoxide (CO), data capture above the target of 75% at all stations.
- For nitrogen dioxide (NO_2), data capture was below the target of 75% at Traralgon in Quarter 3 (Q3) due to an instrument fault, Data capture was above 75% at all other stations.
- For ozone (O_3), data capture was below the target of 75% at Point Cook quarter 3 (Q3) and quarter 4 (Q4) as a result of power supply issues at the site. Data capture was above 75% at all other stations.
- For sulfur dioxide (SO_2), data capture was below the target of 75% at Altona North in quarter 3 (Q3) and quarter 4 (Q4) as the station was being relocated. Data capture was above 75% at all other stations.
- There were no other significant implementation issues.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

- In general, Victoria's air quality in 2019 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.
- Two major bushfires in eastern Victoria in 2019 were the main source of high levels of $\text{PM}_{2.5}$ and ozone, resulting in periods of poor air quality. For PM_{10} , there was an increase in the number of exceedances measured at many monitoring stations in 2019. While some exceedances were due to bushfires, the majority were from windblown dust most likely related to lower-than-average rainfall.
- 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 Alphington, Dandenong and Mooroolbark where there were exceedances of the 1-hour and 4-hour O_3 standard. These all occurred on a single day and were likely to be associated with bushfires.
- The results from issue-specific monitoring stations in Brooklyn and the Latrobe Valley are displayed on EPA's website: 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.

The data are presented in greater detail in www.epa.vic.gov.au/about-epa/publications/1875

CO

Carbon monoxide

(NEPM standard rolling 8 hour = 9.0 ppm)

Station	Number of exceedances	NEPM goal compliance
Alphington	0	Met
Footscray	0	Met
Geelong	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 (ppb)	NEPM goal compliance
Alphington	0	Met	9.0	Met
Footscray	0	Met	10.4	Met
Geelong	0	Met	5.5	Met
Traralgon	0	Not Met*	6.7	Met

* Data availability less than 75%

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
Alphington	1	Met	1	Met
Dandenong	1	Met	1	Met
Footscray	0	Met	0	Met
Geelong	0	Met	0	Met
Melton	0	Met	0	Met
Mooroolbark	1	Met	1	Met
Point Cook	0	Not Met	0	Not Met*
Traralgon	0	Met	0	Met

* Data availability less than 75%

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 (ppb)	NEPM goal compliance
Alphington	0	Met	0	Met	0.4	Met
Altona	0	Not Met*	0	Not Met*	N/A*	Not Met*
Geelong	0	Met	0	Met	0.4	Met
Traralgon	0	Met		Met	0.8	Met

* Data availability less than 75%

Pb Lead

(NEPM standard 1 year = 0.50µg/m³)

No longer monitored in Victoria since 2004.

PM₁₀ Particles as PM₁₀

(NEPM standard 1 day = 50µg/m³)

Station	Number of exceedances	NEPM goal compliance
Alphington	5	Not Met
Dandenong	9	Not Met
Footscray	7	Not Met
Geelong South	11	Not Met
Mooroolbark	4	Not Met
Traralgon	5	Not Met

PM_{2.5}

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

Station	1 year		NEPM goal compliance
	Number of exceedances	Annual average (mg/m ³)	
Alphington	2	7.6	Not Met
Footscray	4	7.5	Not Met
Geelong	1	6.4	Not Met
Traralgon	7	8.9	Not Met

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Queensland by the 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 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- This report contains data from 1 January 2019 to 31 December 2019 and relevant events during the reporting year (commencing 1 July 2019 and ending 30 June 2020).
- In Queensland, the Ambient Air Quality NEPM is implemented under the *Environmental Protection Act 1994* (EP Act), the *Environmental Protection Regulation 2019*, and the Environmental Protection (Air) Policy 2019, with the NEPM standards incorporated as air quality objectives.
- In the 2019–20 reporting period, monitoring was conducted in five of the ten regions identified in the Monitoring Plan: South East Queensland, Gladstone, Mackay, Townsville and Mount Isa. Eleven of the seventeen sites nominated in the monitoring plan, and three additional reporting sites, were operational. Monitoring at four of the six remaining sites concluded prior to 2019–20 due to completion of campaign monitoring or site closure following termination of the monitoring site lease by the property owner.
- Monitoring at an additional monitoring site in Townsville (Stuart) concluded on 14 November 2018 following the sale of the property on which the station was located. Sulfur dioxide concentrations for Townsville are now measured at the Townsville (North Ward) monitoring site.
- Monitoring at an additional monitoring site in Mount Isa (Menzies) concluded on 2 June 2020 due to the sale of the property on which the station was located. Sulfur dioxide and PM₁₀ continues to be measured at The Gap monitoring site in Mount Isa.
- 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 2019.
- Collection of PM_{2.5} and PM₁₀ data using Teledyne Advanced Pollution Instrumentation (TAPI) T640X optical particle spectrometers continued at Townsville (North Ward) site during 2019 and commenced at West Mackay on 14 October 2019 (replacing previous monitoring of PM₁₀ only by TEOM Model 1405 instrumentation).

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

- The results of Queensland's ambient air quality monitoring in 2019 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 one-hour sulfur dioxide concentrations in Mount Isa due to industry emissions, annual average PM₁₀ in Mount Isa due to regional windblown dust events, and annual average PM_{2.5} concentrations at the Rocklea and Southport monitoring sites due to periods of extensive bushfire smoke and dust storms during extremely dry conditions.
- One exceedance of the AAQ NEPM ozone 4-hour standard (the numerical thresholds) occurred at the Flinders View monitoring site in South East Queensland on 11 November 2019. Another exceedance of the AAQ NEPM ozone 4-hour standard occurred at Rocklea monitoring site on 7 December 2019. Both 4-hour ozone standard exceedances were due to the presence of added ozone precursor pollutant emissions from vegetation fires during meteorological conditions conducive to ozone formation. However, the AAQ NEPM goal was met as both sites complied with the maximum allowable exceedances criterion of one day per year.

- Although sulfur dioxide emissions to air from industry sources in Mount Isa have reduced in recent years through capture and conversion to sulfuric acid and improved monitoring and process control feedback mechanisms, existing regulatory controls mean that compliance with the AAQ NEPM sulfur dioxide 1 hour standard is unlikely to be achieved. In September 2015, the Queensland Government issued the smelter operators with an amended Environmental Authority (EA) to allow the copper smelter to continue to operate until 2022. The amended EA permits 1 hour average sulfur dioxide concentrations in excess of the AAQ NEPM standard. As a result, the AAQ NEPM sulfur dioxide 1-hour standard was exceeded at the Menzies and The Gap monitoring sites in Mount Isa on 15 and 10 days respectively during 2019 due to industrial emissions.
- There was a total of 145 exceedances of the AAQ NEPM PM₁₀ 24-hour standard (the numerical threshold) across Queensland performance monitoring sites during 2019. All exceedances of the AAQ NEPM PM₁₀ 24-hour standard 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 the determination of compliance with the 24 hour AAQ NEPM goal.
- The PM₁₀ annual average standard was exceeded at The Gap monitoring site in Mount Isa in 2019 due to extensive regional windblown dust events.
- There was a total of 58 exceedances of the AAQ NEPM PM_{2.5} 24-hour standard across Queensland performance monitoring sites during 2019. All the PM_{2.5} 24-hour exceedances were directly attributed to an exceptional event (emissions from a bushfire or jurisdiction authorised hazard reduction burning) and were excluded from the determination of compliance with the AAQ NEPM 24 hour goal.
- The PM_{2.5} annual average standard was exceeded at the Rocklea and Southport monitoring sites in South East Queensland in 2019 due to extensive regional bushfire smoke and windblown dust events.

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 2019 air monitoring report available at www.qld.gov.au/environment/pollution/monitoring/air-reports

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

CO Carbon monoxide

(NEPM standard rolling 8 hour = 9.0 ppm)

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	Met	0.005	Met
Flinders View	0	Met	0.007	Met
Gladstone				
South Gladstone	0	Met	0.005	Met
Townsville				
North Ward	0	Met	0.003	Met

O₃ 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	1	Met*
Springwood	0	Met	0	Met
Southport	0	Met	0	Met
Flinders View	0	Met	1	Met*

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

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
South East Queensland						
Springwood	0	Met	0	Met	0.001	Met
Flinders View	0	Met	0	Met	0.000	Met
Gladstone						
South Gladstone	0	Met	0	Met	0.002	Met
Townsville						
North Ward	0	ND#	0	ND#	0.000	ND#
Mount Isa						
Menzies	15	Not Met	0	Met	0.004	Met
The Gap	10	Not Met	0	Met	0.002	Met

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

Pb Lead

(NEPM standard 1 year = 0.50 µg/m³)

Station	Annual average (µg/m ³)	NEPM goal compliance
Townsville		
Coast Guard	0.18	Met
Mount Isa		
The Gap	0.10	Met

PM₁₀ Particles as PM₁₀

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

Station	1 day		1 year	
	Number of exceedances (days) [§]	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
South East Queensland				
Mountain Creek+	15 (10*, 5**)	Met	22.9	Met
Rocklea†	16 (10*, 6**)	Met	19.8	Met
Springwood†	13 (8*, 5**)	Met	16.8	Met
Southport†	19 (13*, 6**)	Met	19.7	Met
Flinders View+	21 (12*, 9**)	Met	24.3	Met
Gladstone				
South Gladstone†	10 (2*, 8**)	Met	15.9	Met
Mackay				
West Mackay+‡	10 (2*, 8**)	Met	24.1	Met
Townsville				
North Ward‡	8 (8**)	Met	20.2	Met
Mount Isa				
The Gap+	33 (33**)	Met	29.5	Not Met

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

+ Monitoring by TEOM Model 1405 instrumentation (West Mackay until 14 October 2019).

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

‡ Monitoring by TAPI T640X optical particle spectrometer (West Mackay from 14 October 2019).

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+	17 (14*, 3**)	Met	8.7	Not Met
Springwood+	13 (10*, 3**)	Met	6.7	Met
Southport+	17 (14*, 3**)	Met	8.3	Not Met
Gladstone				
South Gladstone+	5 (2*, 3**)	Met	6.4	Met
Mackay				
West Mackay‡	2 (2*)	# ND	# ND	# ND
Townsville				
North Ward‡	4 (1*, 3**)	Met	7.0	Met

§ Bracketed value () indicates the number of exceedances determined to be directly associated with an exceptional event (*bushfire smoke or **regional windblown dust event) 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.

ND – Not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters (PM_{2.5} monitoring did not commence at West Mackay until Quarter 4).

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 2020.

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 *Environmental Protection Act 1986*.

Implementation activities may be viewed in two categories:

1. those activities related to the monitoring and reporting protocols of the NEPM, plus other activities associated with the 'Future Actions' listed in the NEPM Impact Statement.
2. 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 air quality monitoring stations. Most recently a site was established at Mandurah in October 2019. Reporting from this site commenced in 2020.
- 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 hourly updated air quality index via DWER's webpage (www.der.wa.gov.au/your-environment/air).
- 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 in the key airsheds of Kwinana and Kalgoorlie. 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. 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 2019 except for daily average PM₁₀ at Collie, Geraldton and Kalgoorlie and daily average PM_{2.5} at Kalgoorlie. The annual average goal for PM_{2.5} was not met at Caversham, South Lake, Bunbury and Busselton.

Data from monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goals were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. For averaging times shorter than one year, compliance with the NEPM goal is achieved if the standard for a pollutant is exceeded on no more than a specified number of days in a calendar year (one day per year for all pollutants except PM₁₀ 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 www.wa.gov.au/service/environment/environment-information-services/air-quality

CO

Carbon monoxide

(NEPM standard rolling 8 hour = 9.0 ppm)

Station	Number of exceedances	NEPM goal compliance
Perth		
North East Metro	0	Met
North Metro	0	Met
South East Metro	0	Met
Goldfields		
Kalgoorlie	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
Perth				
North Metro	0	Met	0.006	Met
North East Metro	0	Met	0.005	Met
South Coast	0	Met	0.005	Met
Outer East Rural	0	Met	0.002	Met
South East Metro	0	Met	0.007	Met
Inner West Coast	0	Met	0.004	Met

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
Perth				
North East Metro	0	Met	0	Met
South Coast	0	Met	0	Met
Outer East Rural	1	Met	1	Met
South East Metro	0	Met	0	Met
Inner West Coast	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
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

Pb 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 = 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
Perth				
North East Metro ¹	1	Met	16.3	Met
North Metro ¹	1	Met	15.1	Met
South East Metro ¹	2	Met	16.3	Met
Southwest				
Albany ¹	1	Met	14.6	Met
Bunbury ¹	3	Met	16.1	Met
Collie ¹	7	Not Met	19.3	Met
Midwest				
Geraldton ¹	6	Not Met	20.1	Met
Goldfields				
Kalgoorlie ²	4	Not 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 = 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
Perth				
North East Metro ¹	1	Met	8.0	Not Met
North Metro ¹	0	Met	7.7	Met
South East Metro ¹	2	Met	8.4	Not Met
Southwest				
Bunbury ¹	6	Met	8.4	Not Met
Busselton ¹	5	Met	7.9	Met
Goldfields				
Kalgoorlie ²	3	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.

Location descriptors for metropolitan monitoring stations

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 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In South Australia, the Environment Protection Authority (EPA) is responsible for implementing the National Environment Protection (Ambient Air Quality) Measure, considering the Ambient Air Quality Monitoring Plan for South Australia, developed under the Ambient Air Quality 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.
- 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% criterion for one or more quarters. This was due to numerous factors such as technical issues and equipment breakdowns.
- Nitrogen dioxide – the data capture target of 75% was not achieved at Kensington Gardens.
- 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 – data capture rates above 75% were achieved at Northfield and Port Pirie but not at North Haven.
- 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, except for Kensington Gardens, Elizabeth Downs and Netley. Data capture rates were above 75% at Port Pirie and Whyalla.
- Particles (PM_{2.5}) – data capture rates above 75% were achieved at all sites.
- Kangaroo Island bushfires in late December 2019 caused numerous PM₁₀ and PM_{2.5} exceedances at all sites in the Adelaide metropolitan area.
- 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 2019.

In the Adelaide metropolitan region:

- Carbon monoxide was monitored at Birkenhead. There were no exceedances of the 8-hours CO standard. However, the data has not been included in this Report as this is a non-NEPM site.
- Nitrogen dioxide – the 1-hour and 1-year standards and goals were met at Christie Downs, Elizabeth Downs, Northfield, Netley, and North Haven. The standards and goals were not demonstrated at Kensington Gardens.
- Ozone – the 1-hour and 4-hour standards and goals were met at all Adelaide monitoring stations, except Elizabeth where they were not demonstrated.
- Sulfur dioxide – the 1-hour, 1-day and 1-year standards and goals were met at Northfield, but not demonstrated at North Haven.
- There were multiple exceedances of the 1-day PM₁₀ standard which were likely due to dust storms and bushfires. The 1-year standard was met at Christie Downs and North Haven, not met at Netley due to localised traffic and activities, and not demonstrated at Elizabeth Downs and Kensington Gardens.
- Particles (PM_{2.5}) – the 1-year standard was met at Elizabeth Downs, Netley and North Haven stations but the 1-day standard was not met at these sites, due to the Kangaroo Island bushfires.

In the Spencer Region:

- Multiple exceedances of the 1-day PM_{10} standard occurred at both Port Pirie and Whyalla, due to local sources and dust storms. The 1-year standard was met at both sites.
- At Port Pirie there were multiple exceedances of the 1-hour SO_2 standard, and a single exceedance of the 1-day SO_2 standard that were the result of industrial emissions. However, the 1-year standard was met at this site.
- The annual average lead standard was met at Port Pirie Oliver Street and Frank Green Park.

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} and $\text{PM}_{2.5}$ which doesn't 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 are presented in greater detail in the Air Monitoring Report for South Australia 2019 – Compliance with the National Environment Protection (Ambient Air Quality) Measure available from www.epa.sa.gov.au/data_and_publications/air_quality_monitoring/reports_and_summaries (yet to be published).

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

- Hourly data www.epa.sa.gov.au/data_and_publications/air_quality_monitoring
- Summary reports www.epa.sa.gov.au/data_and_publications/air_quality_monitoring/reports_and_summaries
- Validated data www.data.sa.gov.au

NO_2 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	0.004	Met
ELI01 – Elizabeth Downs	0	Met	0.004	Met
KEN01 – Kensington Gardens	0	ND	0.003	ND
NET01 – Netley	0	Met	0.007	Met
NOR01 – Northfield	0	Met	0.006	Met
NHV01 – North Haven	0	Met	0.005	Met

ND – Not Demonstrated

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
Adelaide				
CHD01 – Christie Downs	0	Met	0	Met
ELI01 – Elizabeth Downs	0	ND	0	ND
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

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
Adelaide						
NOR01 – Northfield	0	Met	0	Met	0.000	Met
NHV01 – North Haven	0	ND	0	ND	0.001	ND
Spencer						
PTP01 – Pt Pirie Oliver street	16	Not Met	1	Met	0.004	Met

ND – Not Demonstrated

Pb

Lead

(NEPM standard 1 year = 0.50µg/m³)

Station	Annual average (µg/m³)	NEPM goal compliance
Spencer		
PTP05 – Pt Pirie Frank Green Park	0.13	Met
PTP05 – Pt Pirie Oliver Street	0.32	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	5	Not Met	17.8	Met
ELI01 – Elizabeth Downs	9	Not Met	21.2	ND
KEN01 – Kensington Gardens	5	Not Met	15.3	ND
NET01 – Netley	11	Not Met	28.3	ND
NHV01 – North Haven	12	Not Met	22.3	Met
Spencer				
PTP01 – Pt Pirie Oliver Street	19	Not Met	19.9	Met
WHY07 – Whyalla Schulz Reserve	13	Not Met	20.3	Met

ND – Not Demonstrated

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	1	Not Met	6.1	Met
NET01 – Netley	1	Not Met	6.2	Met
NHV01 – North Haven	2	Not Met	6.0	Met

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Tasmania by the Hon Roger Jaensch, Minister for the Environment and Parks, for the reporting year ended 30 June 2020.

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 the EPA Division of the Department of Primary Industries, Parks, Water and 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 Division's website at www.epa.tas.gov.au.
- Wood smoke from domestic wood heaters and from planned burning activities continues to be the primary air quality issue for Tasmania.
- In the Tasmanian Air Quality Strategy, published in June 2006, a five-year process to assess compliance with the Air NEPM standards in Tasmania is detailed and strategies for achieving compliance where standards are not being met are specified. The strategy addresses the management of air quality in Tasmania and includes programs to further reduce domestic and industrial emissions of respirable particles in critical regions of the state.
- The *Environmental Management and Pollution Control (Distributed Atmospheric Emissions) Regulations 2007*, gazetted in August 2007, provide a legal framework for programmes to reduce the emission of domestic wood smoke through controls on the import, sale and installation of wood heaters. The regulations were revised and reissued on 26 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 however has found that many councils have difficulty in the implementation of these regulations: Householders often report excessive smoke from neighbouring properties is impacting at night. Resource constraints can mean councils are less likely to be able to respond at these times.
- In 2009 EPA Tasmania established a state-wide network of indicative level air monitoring stations referred to as the BLANKET (Base-Line Air Network of EPA Tasmania) network. In 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 EPA Tasmania's website. Several Tasmanian towns have been found to experience very poor winter-time air quality due to smoke from residential wood heaters.
- 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 the 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 the EPA Division.

- 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 several residential backyards as part of work undertaken with local government supporting chimney-smoke complaint-resolution. The small stations, known as 'baby BLANKETs', are easily relocatable and are of low-cost. The data from these stations have at times assisted councils with their regulatory activities and, importantly, provide a window into 'peak-residential' woodsmoke exposure. The local air quality has been found to be significantly degraded in some instances. However, quantitative data illustrating degraded air quality are not recognised as evidence of an offence under the *Environmental Management and Pollution Control (Smoke) Regulations 2019*, and in some cases no rectification action is taken.
- 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 exceedances of the NEPM standard for CO were recorded in this interval.

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 exceedances of the 24-hour PM_{10} standard of $50 \mu\text{g}/\text{m}^3$ measured in Launceston in calendar year 2019. Data capture rates for the four quarters of 2019 were 100%, 99%, 95% and 97% respectively, giving an annual rate of 98%. The annual average PM_{10} was $16.9 \mu\text{g}/\text{m}^3$, 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 four days in Launceston in 2019. This is lower than results from recent years (10 in 2018; 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 2019 result is a considerable improvement on the 35 exceedance days observed when PM_{2.5} monitoring was introduced in 2006. The annual average PM_{2.5} concentration in 2018, of 7.6 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). Data capture rates by quarter were 90%, 81%, 67%, and 90%, giving an annual rate of 82%.

Hobart

PM₁₀

- In Hobart in 2019 there were no exceedances of the 24-hour PM₁₀ standard. Data capture rates in each quarter were 33%, 96%, 99%, and 100% and 82% annually. The annual average PM₁₀ level was 11.6 µg/m³, which meets the annual PM₁₀ standard of less than 25 µg/m³.

PM_{2.5}

- There were no exceedances of the 24-hour standard for PM_{2.5} of 25 µg/m³ in Hobart in 2019, and the four days above the standard were due to bushfires (3) and planned burning (1). The annual average PM_{2.5} concentration of 6.5 µg/m³ met the annual average PM_{2.5} standard of 8 µg/m³. Data capture rates by quarter were 94%, 87%, 98%, and 98%, giving an annual rate of 94%.

Devonport

PM₁₀

- 2019 was the seventh full year of operation of the Devonport air monitoring station. No exceedances 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. Data capture rates by quarter were 100%, 97%, 99%, and 100%, giving an annual rate of 99%.

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 2019. The annual average PM_{2.5} concentration of 7.0 µg/m³ met the annual standard of 8 µg/m³. Data capture rates by quarter were 57%, 91%, 89%, and 100%, giving an annual rate of 84%.

Data from relevant monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goal were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. For averaging times shorter than one year, compliance with the NEPM goal is achieved if the standard for a pollutant is exceeded on no more than a specified number of days in a calendar year (one day per year for all pollutants except PM₁₀, which may be exceeded no more than five days per year) and at least 75% 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. (www.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 = 50µg/m³)

Station	Number of exceedances	NEPM goal compliance
Hobart	0	Met
Launceston	0	Met
Devonport	0	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 (mg/m ³)
Hobart	0	6.5
Launceston	4	7.6
Devonport	1	7.0

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for the ACT by Rebecca Vassarotti MLA, Minister for the Environment, for the reporting year ended 30 June 2020.

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 2019–20 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 ACT NEPM monitoring network consisted of three monitoring stations in 2019.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The ACT Government has been undertaking ambient air quality monitoring in Canberra since the early 1990s. 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 stations to demonstrate compliance they also need at least 75% data captured in each quarter.

A summary of the 2019–20 monitoring results is:

- Monitoring was performed in accordance with the ACT's monitoring plan, AAQ NEPM Technical Papers and ACT Health's accreditation by the National Association of Testing Authorities (NATA).
- Air quality in the ACT was generally good in the first ten months of the year. However, it was severely impacted in November and December 2019 by the unprecedented bushfire activity in south eastern Australia.
- Bushfires caused the 8-hour CO standard to be exceeded on 31 December 2019 across the ACT, the first such exceedance since the implementation of the AAQ NEPM in 1998. Whilst this was able to be eliminated as an exceptional event however compliance was not demonstrated at Monash due to insufficient data in the second quarter of the year.
- Ozone levels exceeded both 1-hour and 4-hour standards on 20 December 2019 across the ACT due to extreme bushfire smoke.
- Ozone levels above the 4-hour standard were recorded two more times at Florey on 17 January and 9 December 2019, due to hotter weather increasing the conversion of vehicle emissions to ozone and bushfires respectively.
- Particle pollution (both PM₁₀ and PM_{2.5}) increased dramatically during the bushfire crisis, which peaked in December 2019.
- The daily PM₁₀ standard was exceeded on 29 days at one or more monitoring stations, compared to six days in 2018. All the PM₁₀ exceedances occurred outside the winter season and were due to bushfires and dust storms and are excluded under the exceptional event rule for reporting compliance.
- The daily PM_{2.5} standard was exceeded on 29 days at one or more monitoring stations, compared to five days in 2018. Only two exceedances (18 and 19 May 2019) at Monash were attributed to emissions from domestic wood heaters. All other exceedances were due to bushfires and dust storms and are excluded under the exceptional event rule for reporting compliance.
- In the case of PM₁₀ and PM_{2.5} all exceedances associated with an exceptional event are included when determining compliance with the annual average goal.

CO Carbon monoxide

(NEPM standard rolling 8 hour = 9.0 ppm)

Station	Number of exceedances	NEPM goal compliance*
Florey	1	Met
Monash	1	ND#

* The NEPM goal for the eight-hour carbon monoxide standard allows one exceedance day per year.

ND – Not Demonstrated insufficient data to demonstrate compliance, data availability was less than 75% in one or more quarters during 2019

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
Florey	0	Met	0.005	Met
Monash	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
Civic	1	Met	1	Met
Florey	1	Met	3	Not Met
Monash	1	Met	1	Met

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

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

PM₁₀

Particles as PM₁₀

(NEPM standard 1 day = 50µg/m³, ACT standard 1 year# = 20µg/m³,
(NEPM standard 1 year = 25µg/m³)

Station	1 day		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (µg/m ³)	ACT goal compliance
Civic	29	Met	22.9	Not Met
Florey	28	Met	23.8	Not Met
Monash	22	Met	19.1	Met

The ACT has adopted a lower standard for PM₁₀ for 1 year of 20µg/m³

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
Civic	29	Met	12.8	Not Met
Florey	29	Met	14.8	Not Met
Monash	28	Not Met	14.1	Not Met

Northern Territory

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for the Northern Territory by the Hon Eva Lawler, Minister for Environment, for the reporting year ended 30 June 2020.

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 PM_{10} – 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.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

During 2019, compliance with NEPM goals for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), or ozone (O_3) were met at all the ambient air quality monitoring stations in the Darwin region, since no exceedances of the AAQ NEPM standards for these pollutants were recorded. Although some exceedances were recorded for PM_{10} and $PM_{2.5}$, compliance with the NEPM goals were met for their respective short-term AAQ standards. Conversely, compliance with the NEPM goal for the long-term $PM_{2.5}$ standard was not met at any of the three monitoring stations.

PM_{10} : Compliance with the NEPM goals for particulates as PM_{10} was met at all the stations. To comply with the 1-day NEPM goal for particulates as PM_{10} no exceedance of the 1-day PM_{10} standard is allowed, unless determined as an exceptional event. All the recorded exceedances were linked to hazard reduction burns or other natural fire activities, which are considered exceptional events. All the monitoring sites also complied with the 1-year PM_{10} standard.

$PM_{2.5}$: To comply with the 1-day NEPM goal for particulates as $PM_{2.5}$, no exceedance of the $PM_{2.5}$ 1-day standard is allowed, unless determined to be an exceptional event. During 2019, 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 1-year NEPM standard 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 the standard for a pollutant is exceeded on no more than a specified number of days in a calendar year (one day per year for all pollutants except PM_{10} and $PM_{2.5}$, 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 at <http://ntepa.webhop.net/NTEPA>.

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

CO

Carbon monoxide

(NEPM standard rolling 8 hour = 9.0 ppm)

Station	Number of exceedances	NEPM goal compliance
Palmerston	0	Met
Stokes Hill	0	Met
Winnellie	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
Palmerston	0	Met	0.0022	Met
Stokes Hill	0	Met	0.0018	Met
Winnellie	0	Met	0.0017	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
Palmerston	0	Met	0	Met
Stokes Hill	0	Met	0	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	0.0006	Met
Stokes Hill	0	Met	0	Met	0.0006	Met
Winnellie	0	Met	0	Met	0.0005	Met

Pb Lead

(NEPM standard 1 year = 0.50µg/m³)

No monitoring for lead is undertaken in the NT for NEPM reporting

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 (mg/m ³)	NEPM goal compliance
Palmerston	10	Met	22.0	Met
Stokes Hill	11	Met	22.4	Met
Winnellie	15	Met	23.0	Met

All exceedances were directly associated with exceptional events.

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 (mg/m ³)	NEPM goal compliance
Palmerston	21	Met	9.8	Not Met
Stokes Hill	20	Met	9.2	Not Met
Winnellie	17	Met	8.9	Not Met

All exceedances were directly associated with exceptional events.

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 from the Commonwealth, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Australian Government continues to implement the Assessment of Site Contamination NEPM (ASC NEPM) administratively on Commonwealth land across Australia.

The ASC NEPM is an example of partnering among all jurisdictions. It provides a practical and nationally consistent framework for Australian Government agencies to use in assessing contamination. The science-based approaches in the ASC NEPM can support other collaborative work among the Commonwealth, states, and territories on contaminants such as PFASs.

The PFAS National Environmental Management Plan (PFAS NEMP) assists landowners, site managers, communities and governments by providing consistent, risk-based national standards and guidance for managing PFAS contamination. Further guidance for version 2.0 was developed throughout 2019–20. Following extensive stakeholder engagement and consultation, the PFAS NEMP 2.0 was endorsed by Heads of EPAs, agreed by Environment Ministers, and published in May 2020.

Collectively, the ASC NEPM and the PFAS NEMP assist the Australian people in responding to contamination.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The ASC NEPM continues to provide a consistent, effective, and efficient national methodology which contributes to achieving Australian Government 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 for assessing contaminated sites and includes human health and ecological investigation levels for listed toxicants. The next review of the ASC NEPM will be an opportunity to develop additional investigation levels for contaminants such as PFASs, persistent organic pollutants, environmentally mobile chemicals, and endocrine disrupting chemicals. It will also provide an opportunity to update the techniques for laboratory analysis of toxicants in air, soil, and water. This review could build on lessons learned through development of the PFAS National Environmental Management Plan.

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 2020.

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 decisions on whether contaminated land requires regulation under the *Contaminated Land Management Act 1997* (the Act) (NSW).
- In 2019–20, the EPA was notified of 37 contaminated sites, 11 new sites were declared to be significantly contaminated under the Act, and regulation of 20 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 2019–20 accredited site auditors issued 262 site audit statements following 206 statutory audits and 56 non-statutory audits under the Act.
- 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 EPA sees a need for a clear and transparent process for adopting new EILs into the NEPM.
- There remains some contention within industry regarding: the definition of friable asbestos within the NEPM (Schedule B1 Vol 2), the misinterpretation of guidance and managing low levels of friable asbestos when completing an asbestos in soils assessment, and the resulting remediation (Schedule B2 Vol 3). There is also uncertainty as to how proposed updates to the Western Australian Department of Health, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (May 2009), revised as a consultation draft in November 2019, will be incorporated into the NEPM.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The 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 2020.

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 contaminants 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 Act 2017*. A new provision 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 review of the PFAS NEMP, with the PFAS NEMP 2.0 released in May 2020.

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 (NRF) under development—this would not be a NEPM itself but would complement the ASC. The NRF was released in late 2019 and, subsequently, a dedicated website in May 2020: www.crccare.com/nrf-home-new.

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) for Queensland by the 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 2020.

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 which is 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 EMR 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 CLR if it is necessary to take action to remediate the contaminated land to prevent serious environmental harm.
- 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.
- As at the end of the reporting period, Queensland had 30 contaminated land auditors approved 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 2019–20:
 - 131 sites were listed on the EMR for a hazardous contaminant
 - 143 sites were listed on the EMR as a notifiable activity
 - One site was listed on the CLR.
- DES appointed eight contaminated land auditors during 2019–20, which includes five under the EP Act and three under the mutual recognition framework on the basis of approvals held in other jurisdictions. This compares with three approved the previous period 2018–2019 under the mutual recognition framework. Auditor applications are assessed by a DES technical panel who review contaminated land auditor applications.
- 132 sites were finalised during the reporting period as being adequately assessed according to the NEPM, remediated and removed from the EMR.
- 46 Site Management Plans were issued during the reporting period for development or use of a site, including those that were assessed and partially remediated with management of residual contamination for restricted land uses.
- 171 permits were issued during the reporting period 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 the Queensland Government's guidelines on contaminated land and, in instances of surface and groundwater contamination, the Environmental Protection (Water and Wetland Biodiversity) Policy 2019. 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 provides 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 30 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 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The Department of Water and Environmental Regulation is responsible for regulating the assessment of site contamination in Western Australia under the *Contaminated Sites Act 2003* (CS Act) and the *Contaminated Sites Regulations 2006*.
- The NEPM and other relevant technical guidelines are taken into account by the department 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.
- Compliance with the NEPM and departmental guidelines is assessed in the site classification/ reclassification process under the CS Act. The department classified 356 sites (including reclassifications) during the year, bringing the total number of classified sites to 4182. As of 30 June 2020, 1198 of these sites were listed on the public contaminated sites database and require remediation or restrictions on the use of the land and/or groundwater to protect public health and/or the environment and/or environmental values.
- During the year ended 30 June 2020, 194 known or suspected contaminated sites were reported to the department compared with 220 in the previous year.
- In the same period, the department received 57 mandatory audit reports related to contaminated sites, and a further 27 voluntary audit reports or addendums. 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 'source' sites and their related 'affected' sites.
- Environmental practitioners' awareness of the amended NEPM requirements has continued to improve and as a result, the assessment reports submitted to the department generally apply the guidance in an appropriate and consistent manner.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The NEPM continues to be used as the central technical reference document for site assessment by contaminated site professionals operating in Western Australia. The department 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 continues to be a limitation to consistent implementation of the guidance across a range of ecological settings. 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. Implementation of the general provisions of the NEPM would be improved by development and inclusion of additional ecological assessment levels for common types of contamination.

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 2020.

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 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 2019–2020 reporting period, the EPA received 134 notifications of site contamination that affects or threatens underground water. In the same period, the EPA recorded 24 site contamination audit reports on the Public Register, required to be kept by the EPA under the Act. There were 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 supported the implementation of the ASC NEPM in South Australia during 2019/2020 included the following:
 - The EPA continues to update and revise guidance on the processes for assessment, remediation and auditing of site contamination.
 - 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 practitioners.
 - 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 progressed the development of an Environment Protection Policy under the *Environment Protection Act 1993* 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 continued to contribute to the development of a site contamination planning framework to properly integrate site contamination as part of the State-wide planning reform.

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 continued to strongly support the development and implementation of an agreed national approach.

Community and stakeholder engagement

The EPA continued 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. The 2019 NEPC Act review 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.

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 the Hon Roger Jaensch, Minister for the Environment and Parks, for the reporting year ended 30 June 2020.

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 2020* (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, although management of PFAS contamination is also an increasing focus. Through the implementation of UPSS Regulations, regulatory focus has shifted towards prevention of pollution arising from UPSS systems, 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 ACT by Rebecca Vassarotti MLA, Minister for the Environment, for the reporting year ended 30 June 2020.

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 2017 (EPP), made under the Act, is the primary policy document for the assessment and management of contaminated land in the ACT and references the 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.

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 continue to express the need for legislative or other changes to NEPC processes to allow for the inclusion of criteria for emerging contaminants such as PFAS in the NEPM and the inclusion of guidance in relation to site remediation and management particularly in light of the release of the National Remediation Framework and PFAS National Environment Management Plan.

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, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In the reporting period of 1 July 2019 to 30 June 2020 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 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.
- Per- and poly-fluoro alkyl substances (PFAS), asbestos, and persistent organophosphate and organochlorine pesticides and herbicides are common contaminants of concern in the NT.
- Asbestos matters, largely driven by diffuse asbestos contamination as a result of the devastation of Cyclone Tracy, continue to be 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 inter-agency 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 continues to collaborate with the Commonwealth and its consultants on issues such as the ongoing asbestos and PFAS contaminated soil 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, including the National Chemicals Working Group working on the PFAS National Environmental Management Plan (PFAS NEMP), 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 Northern Territory, to determine the presence or absence of sites impacted with PFAS.
- The NT EPA continues to respond 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.
- An ongoing challenge for the NT EPA includes the inappropriate use of the ASC NEPM in illegal dumping matters to justify the illegal dumping of waste or subsequent impacts caused by the waste. ASC NEPM is still used by some to attempt to justify leaving a certain level of contamination during the clean-up of the incident impacts, or used to justify why clean-up of an incident shouldn't be required.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

- The NEPM has provided 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 process.
- It provides a stable and defensible position for the NT to require developments to undertake contaminated land investigations where applicable, with the support of the NEPM to clearly explain the need.
- Continued education of the ASC NEPM within the NT is required to ensure that all parties are clearly aware of all requirements outlined within the ASC NPEM. This is being progressed through the development of the strategies mentioned in Part 1 and further interaction and consultation with the relevant planning authorities, professional organisations such as the Australian Land and Groundwater Association, consultants, and the community. The requirement to use accredited contaminated site auditors to audit, amongst other things, compliance with ASC NEPM continues to increase across the NT.

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 from the Commonwealth, for the reporting year ended 30 June 2020.

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 National Measurement Institute (NMI) conducts monitoring, compliance and enforcement activities to detect and respond to non-compliance under the *Fuel Quality Standards Act 2000* (the Act) and Fuel Quality Standards Regulations 2019.

NMI officers visited 274 retail fuel sites during 2019–20 as part of the Fuel Quality Monitoring Program. Where they detected non-compliance, the NMI took action to ensure fuel supplied complied with the requirements of the Act.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

In April 2018, Environment Ministers endorsed a work plan under the National Clean Air Agreement, which included a review of the need for the Diesel NEPM. This involved internal consultations across states and territories and the Commonwealth regarding the Diesel NEPM in 2018 and 2019. Jurisdictions agreed the NEPM fulfils a useful role, but would benefit from further work. It was agreed that the NEPM be retained and its need and/or purpose be considered in three to five years’ time in the context of any decision to progress national noxious emissions standards for vehicles to Euro 6d/ VI.

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 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In NSW the *Protection of the Environment Operations Act 1997* (the Act) 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 Transport for New South Wales (TfNSW) continue to collect data on the diesel vehicle fleet and implement a range of NSW Government funded programs to reduce diesel emissions. In 2019–20, NSW continued the Smoky Vehicles Program, implementation of the EPA's [Diesel and Marine Emissions Management Strategy](http://www.crccare.com/nrf-home-new) (<http://www.crccare.com/nrf-home-new>), the TfNSW Clean Fleet Program and diesel bus upgrade program.

NSW diesel fleet profile

TfNSW registration data show the proportion of diesel vehicles in the fleet constituted 20.87 per cent of the total NSW fleet at 30 June 2020 (see Table 1 below). This is compared to 20.22 per cent in June 2019, and 19.5 per cent in June 2018.

TfNSW registration data indicate that, between June 2019 and June 2020, the number of diesel vehicles registered in NSW increased by 60,787 or 4.52 per cent. Light commercial vehicles increased by 7.06 per cent over this period and constitute the largest sector of the diesel fleet at 40.02 per cent. Offroad passenger vehicles account for 34.16 per cent of the diesel fleet. Together, these categories account for 74.19 per cent of the total diesel fleet in NSW. Table 2 shows changes in diesel vehicles by category between June 2019 and June 2020.

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

NSW June 2020	Diesel vehicle categories								
	Passenger vehicles	Off-road passenger vehicles	People movers	Light commercial vehicles	Heavy trucks	Prime movers	Small buses	Buses	Other
Diesels in total NSW fleet	2.82%	7.13%	0.16%	8.35%	1.54%	0.34%	0.16%	0.19%	0.18%
Vehicles by category in diesel fleet	13.53%	34.16%	0.79%	40.02%	7.40%	1.61%	0.76%	0.90%	0.83%
									20.87%
									100%

Source: Transport for NSW registration data (June 2020)

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-19	Jun-20				
Passenger Vehicles	181,273	189,963	8,690	4.79%	0%	14.30%
Off-Road Passenger Vehicles	466,232	479,741	13,509	2.90%	0%	22.22%
People movers	10,834	11,063	229	2.11%	0%	0.38%
Small Buses	10,412	10,731	319	3.06%	0%	0.52%
Light Trucks	525,083	562,149	37,066	7.06%	0%	60.98%
Light Plants	955	879	-76	-7.96%	-0.13%	0%
Buses	13,423	12,650	-773	-5.76%	-1.27%	0%
Heavy Trucks	102,919	103,909	990	0.96%	0%	1.63%
Prime Movers	22,277	22,564	287	1.29%	0%	0.47%
Heavy Plants	3,114	3,118	4	0.13%	0%	0.01%
Other	7,137	7,679	542	7.59%	0%	0.89%
Total	1,343,659	1,404,446	60,787	4.52%	N/A	N/A

Source: Transport for NSW registration data (June 2020)

Diesel vehicle emissions estimates

Diesel vehicles made up 20.87 per cent of the total NSW fleet as at 30 June 2020, however, they contribute disproportionately to the amount of air pollution produced by on-road mobile sources.

On-road mobile sources were estimated to contribute approximately 55 per cent NO_x and 13 per cent of fine particle ($\text{PM}_{2.5}$) emissions from all anthropogenic sources in the Sydney² region in 2013.

Based on projections from the 2013 Air Emissions Inventory for the NSW Greater Metropolitan Region, diesel vehicles currently contribute approximately 73 per cent of NO_x and 90 per cent of exhaust particle emissions (as $\text{PM}_{2.5}$) 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, despite 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.

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>.

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 10 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 183 smoky vehicle reports are received each month from the public (more than 2200 public reports over the year), indicating a high level of awareness in the community of the unacceptability of excessive visible emissions.

In 2019–20, the EPA issued 804 advisory letters based on public reports, of which 621 advisory letters were to diesel vehicle owners.

Additionally, 49 defective vehicle notices were issued in 2019–20 of which 38 were for 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.

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 TfNSW Smoky Vehicle Enforcement Project, which previously operated in the M5 East Tunnel, concluded in 2017–18.

Table 3: Smoky vehicles – actions taken

	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20
Total number of vehicles that received fines	303	301	186	114	289	78	89	75	6	0	0
Diesel vehicles that received fines	278	286	173	109	283	76	89	74	6	0	0
<i>Percentage of all vehicles fined that were diesel vehicles</i>	92%	95%	93%	96%	98%	97%	100%	99%	100%	0	0
Total vehicles that received advisory and warning letters	740	750	556	552	891	812	782	957	681	835	804
Diesel vehicles that received advisory and warning letters	133	135	96	74	462	423	433	475	438	623	621
<i>Percentage of all vehicles that received advisory and warning letters that were diesel vehicles</i>	18%	18%	17%	13%	52%	52%	55%	50%	64%	75%	77%

Audited maintenance programs for diesel vehicles

TfNSW operates an audited maintenance program known as 'Clean Fleet'. This was launched in 2006 and currently has approximately 5,972 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 2019–20, and a small reduction in participation was evident.

Other programs

Diesel bus upgrade program

Since 2006 TfNSW, through State Transit, has been replacing older diesel buses in the Sydney Region with Euro 5 EEV (enhanced environmentally friendly vehicle) and, recently, Euro 6 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) while Euro 6 vehicles have both lower NO_x and particulate emission limits than Euro 5. 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 2019–20, State Transit received 130 new Euro 5 or Euro 6 diesel buses into its bus fleet, with 87% of the fleet now Euro 3 or higher emissions standard, and 58.3% of the fleet Euro 5 or above (up from 53% Euro 5 or equivalent in 2018–19). State Transit overall fleet numbers and emissions are reduced compared to previous years, as State Transit no longer operates bus services in the South West Region (Region 6). These services are now privately operated by Transit Systems. Subsequently, State Transit's fleet size has decreased from 2046 buses as at June 2018, to 1416 at June 2020. The State Transit bus fleet is certified against the TfNSW Clean Fleet Program until May 2021.

Construction industry

In 2019–20 the Department of Planning, Industry and Environment (DPIE) continued to administer the NSW Government Resource Efficiency Policy (<https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/sustainability-government/net-zero-government>) (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.

Locomotives

Amendments to the Act to regulate railway rolling stock operations, in addition to railway infrastructure operators, 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. During 2019–20, the EPA developed the conditions of the licences through extensive consultation with the rail industry and input from community and other relevant stakeholders. The licences were issued in August 2020.

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 2020.

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*. These were released for public comment during 2019/20 and will be ready for the commencement of the *Environment Protection Act 2017* in 2021.

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 reduced by 1.6% (energy.gov.au) and the number of diesel vehicles registered in Victoria has risen by 8% (abs.gov.au). The reduction in diesel fuel use despite the greater number of diesel vehicles is likely due to government responses to Covid 19. Emissions from diesel engines will have reduced with the decreased fuel consumption, combined with gains in engine efficiency as the fleet age reduced.

Smoky vehicles program

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 2019/2020, the program resulted in 973 smoky vehicle letters being issued.

The following table indicates the number of smoky vehicle letters being sent from the public and official reporting programs over the past ten years. In previous years there has been a slow downward trend in the number of letters issued from the program. Considering that smoky vehicle letters were not issued in the last three months of the 2019/20 FY due to Covid response, the reporting has been steady.

Table 1: Number of cautionary letters issued under the smoky vehicles reporting program from public and official reports over the last 10 years. From 2019/20 the streams are not separated

Year	2010/11	2011/12	2012/13	2013/14*	2014/15*	2015/16*	2016/17	2017/18	2018/19	2019/20
Number of letters from public reports	5766	4895	3910	2012	2124	1901	1815	1777	842	-
Number of letters from official reports	630	495	554	145	193	95	196	459	198	-
Total number of letters	6396	5390	4464	2157	2317	1996	2011	2236	1040	973

* 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

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 NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for Queensland by the Hon Mark Bailey, Minister for Transport and Main Roads, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The *National Environmental Protection Council (Queensland) Act 1994* provides the framework for implementing the (Diesel Vehicle Emissions) 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 1—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 reporting period ending 30 June 2020 was impacted by extremely dry conditions and extensive bushfires. Monitored pollutants have exceeded national standards or guidelines on up to 50 days, depending on location. Air quality complied with national air quality standards for only three of the six major air pollutants.

During the reporting period, there were 20 days in South East Queensland (SEQ) where air quality for visual amenity was classed as poor, indicating that at least one NEPM air quality monitoring station did not meet the visibility objective. Gladstone recorded eight poor days, Townsville one poor day, while Mackay recorded no poor days in the reporting period. During the reporting period, the air quality trend for human health found 51 poor days registered in Mount Isa, 32 poor days in SEQ, 12 poor days in Mackay, nine poor days in Townsville and eight poor days in Mackay.

The majority of these poor air quality days were the result of elevated particle levels in all areas of Queensland where monitoring takes place, but from dust storms and bushfires rather than transport related emissions.

During the reporting period, DES conducted an on-road measurement campaign in Brisbane using remote sensing. Remote sensing provides instantaneous 'snapshot' measurements of on-road emissions from a relatively large sample of moving vehicles at fixed locations in the road network.

As at the end of the reporting period, the data was being analysed.

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 rule.

Once reported data is matched with the information provided, a letter is 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 2019 to 30 June 2020 there were a total of 2,455 vehicles reported through the smoky vehicle online reporting form in Queensland. Of the reported vehicles 867 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 18,778 heavy vehicles while private approved inspection stations inspected a further 48,962. The vehicles were fuelled by diesel, diesel & electric and diesel & gas 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) has been the only entity to own and operate a facility for testing diesel powered heavy vehicles under the DT80 emission testing regime. During the 2020 COVID-19 lockdowns and restrictions, the BCC made the decision to stand down the testing for a period.

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.

At the time of reporting, the facility has not re-opened.

The National Heavy Vehicle Regulator (NHVR) is now overseeing heavy vehicle standards and is proposing 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, approached the BCC during the reporting period 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 were 41,807 Queensland registered heavy vehicles participating in the NHVAS maintenance scheme as at the end of the reporting period, representing a slight increase on last years accredited vehicles. The vehicles were operating under 935 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 were 1,141 Operators and 10,320 heavy vehicles operating under the NHVAS mass scheme as at the end of the reporting period 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 2020.

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 *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.

The 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 includes initiatives that target on-road vehicles. The implementation of vehicle emissions reduction initiatives in the AQMP is 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 DWER. DWER will continue to work with DoT, 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 2019–20 the Smoky Vehicle Reporting Program received 579 reports, an average of 48 reports per month, representing a 20 per cent increase in reports from 2018–19. The number of reports received represents a notable increase from previous years.

There were no significant changes in the operation of the smoky vehicle reporting program for 2019–20.

Prior to contacting the owners of reported vehicles, DWER and DoT verify reports by comparing reported vehicle details against the DoT vehicle registration database, discarding reports if details do not sufficiently match. 505 advisory letters were sent to reported vehicle owners in 2019–20 (87 per cent valid report rate).

Table 1 summarises the responses received for vehicles reported from July 2019 to June 2020.

Table 1. Responses from owners of reported vehicles

Response	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Reports received	268	455	480	415	482	579
Letters sent	N/A	372	424	353	417	505
Responses received	146	282	292	191	225	265
Vehicle repaired	57(48%)	127 (45.0%)	136 (46.6%)	129 (67.5%)	142 (63.1%)	174 (65.4%)
Vehicle does not smoke	45(38%)	90 (31.9%)	96 (32.9%)	49 (25.7%)	67 (29.8%)	71 (26.7%)
Can't afford to repair	1 (<1%)	3 (1.1%)	6 (2.1%)	0 (0%)	0 (0.0%)	1 (0.4%)
Disposed of vehicle	3 (2%)	8 (2.8%)	16 (5.5%)	5 (2.6%)	7 (3.1%)	12 (4.5%)
Wrong vehicle	6 (5%)	11 (3.9%)	19 (6.5%) ³	1 (0.5%)	1 (0.4%)	2 (0.8%)
Other	8 (7%)	40 (14.2%)	19 (6.5%)	7 (3.7%)	8 (3.6%)	6 (2.3%)
Petrol	35 (30%)	57 (20.2%)	49 (16.8%)	66 (20.2%)	70 (16.8%)	95 (17.5%)
Diesel	71 (60%)	194 (68.8%)	208 (71.2%)	259 (79.4%)	345 (82.7%)	443 (81.6%)
LPG	2 (<2%)	1 (0.4%)	0 (0%)	0 (0%)	2 (0.5%)	5 (0.9%)

2019-20 saw a consistent percentage of vehicle owners reporting they had repaired or serviced their vehicle when compared to recent years.

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

There were 22 vehicles reported more than once in 2019-20, 13 of which were reported twice or more within 30 days. Of the vehicles reported more than once, 11 vehicle owners responded to the advisory letters sent. Three vehicles were reported three times. No responses were received to the advisory letters sent to those vehicle owners.

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

Diesel vehicle emission testing and repair programs

The Western Australia government does not undertake diesel vehicle emission testing and repair programs.

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.

Audited maintenance programs for diesel vehicles

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

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 three accreditation modules – Fatigue Management, Maintenance Management, and Loading and Dimension. An optional module, Mass Management, is also available.

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 licensing 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 the Hon David Speirs, Minister for Environment and Water, for the reporting year ended 30 June 2020.

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 (Light Vehicle Standards) Rules 2018: Rule 131 – 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 130 in *Road Traffic (Light Vehicle Standards) Rules 2018* 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 Infrastructure and Transport (DIT) 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

No applicable.

Diesel vehicle retrofit programs

Not applicable.

Other programs

In 2019 the Department for Infrastructure and Transport (DIT) introduced a new specification, *PCST2 Sustainability in Construction*, which includes requirements for DIT contractors to reduce the environmental as well as community / workforce health impacts of vehicles, plant and equipment emissions. The 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 for larger projects 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.

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for Tasmania by the Hon Roger Jaensch Minister for the Environment and Parks, for the reporting year ended 30 June 2020.

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 then 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 training 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 the market for LNG and CNG within the heavy vehicle road transport industry in Tasmania has significantly declined due to the low cost of diesel fuels.

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 2020, there were 14,778 diesel powered heavy vehicles (that is vehicles over 4.5 tonnes) and 139,037 diesel powered light vehicles registered in the State. This represents an increase of 2.6 % and an increase of 6.3 % respectively since 1 July 2019. Of the total of 649,477 vehicles registered in Tasmania on 30 June 2020, 23.7 % 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 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 do 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 ACT by Rebecca Vassarotti MLA, Minister for the Environment, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Australian Capital Territory's (ACT's) *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; and
- 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 35 Euro VI buses in 2019–20. A total of 167 Euro VI buses have been delivered as at June 30, 2020. 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, for the reporting year ended 30 June 2020.

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 Australian Vehicle Standard Rules which require all vehicles to comply with Australian Design Rules when in service.

In the Northern Territory, there are approximately 65,182 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 1.3 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, nine per cent in Katherine and two 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 from the Commonwealth, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Commonwealth supports the Controlled Waste NEPM through our hazardous waste data and reporting activities.

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

- Working with the states, territories and industry to deliver the National Waste Policy Action Plan’s commitment to implement agreed national waste data, reporting and information-sharing improvements by 2022.
- Releasing 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.
- Annual data on hazardous waste generation produced for reporting under the Basel Convention (for the 2018 reporting year).

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 the Environment, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The NEPM has been in place since 1998, with the most recent changes being minor and implemented in NSW in 2014 following the 10-year review of the NEPM in 2010.

Recent incidents outside of NSW which resulted in adverse impacts indicate that interjurisdictional management of some controlled wastes could be improved. In response NSW is currently leading work to progress a nationally harmonised waste tracking system. Improved information sharing, accessibility and transparency may prevent such incidents. Currently, each jurisdiction has their own waste tracking systems and requirements which lack consistency and differ widely in their ability to provide and share information necessary to ensure the effective implementation of the NEPM.

NSW is currently developing a 20-Year Waste Strategy that will improve environmental outcomes across the state's waste and resource recovery systems and services, including improved waste management and environmental outcomes for controlled waste in NSW.

In accordance with section 13 of the NEPM, a report on the movement of controlled waste into NSW is provided in Part 2.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Inconsistencies between jurisdictions' waste management strategies, policies, legislation and regulation limit the effectiveness of the NEPM, as noted in Part 1. In addition, outdated waste tracking processes and the absence of a nationally integrated waste tracking system greatly limits NSW and other jurisdictions' ability to ensure compliance with NEPM requirements and achieve the NEPM's goal:

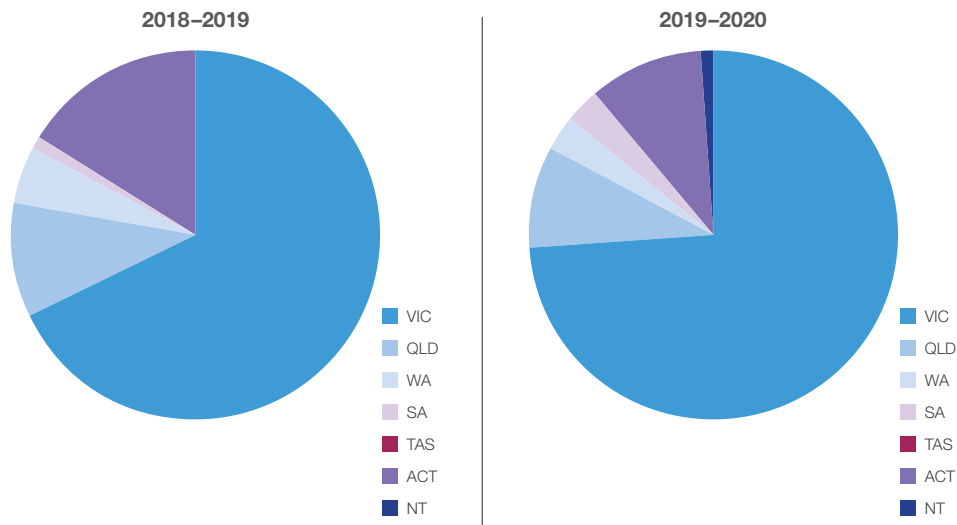
To provide a basis for ensuring that controlled wastes which are to be moved between States and Territories are properly identified, transported, and otherwise handled in ways which are consistent with environmentally sound practices for the management of these wastes.

In 2019–20, a total of 85,270 tonnes of controlled waste in 5518 movements was reported as having been transported into NSW from interstate (Tables 2 and 4). This is a 29 per cent increase on the 66,046 tonnes moved in 2018–19 and a 19 per cent increase on the 4631 waste movements that occurred in 2018–19. This compares to the reported 7 per cent decrease in controlled waste tonnage and 5 per cent decrease in waste movements from 2017–18 to 2018–19.

NSW received more waste in 2019–20 compared to 2018–19 from all states except Western Australia, Tasmania and the ACT.

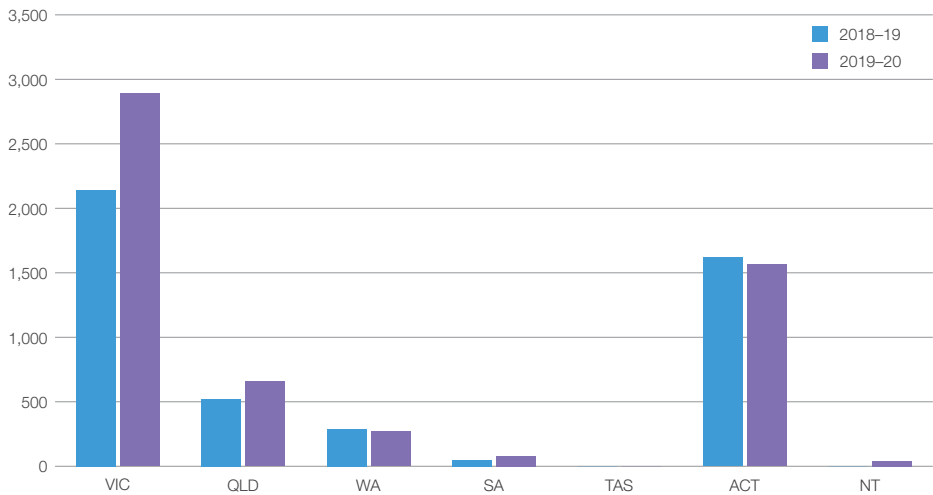
The greatest increase was from Victoria (18,853 tonnes, 43 per cent), followed by South Australia (1244 tonnes, 128 per cent), Queensland (790 tonnes, 11 per cent) and Northern Territory (585 tonnes, 1143 per cent). The greatest decrease was from Western Australia (638 tonnes, 18 per cent) followed by the ACT (1605 tonnes, 15 per cent) and Tasmania (5 tonnes, 5 per cent). Victoria's contribution to all waste transported into NSW increased from 68 per cent to 74 per cent (Figures 1 and 2).

Figures 1 and 2 – Percentage waste contribution from states and territories



During the reporting period there were 887 more movements into NSW than during the 20182019 period; with Victoria accounting for the largest increase (by 750) and the ACT the largest decrease (by 54) (Figure 3).

Figure 3 – Waste movements by Transport Certificate totals (all TCs)



Highlights by jurisdiction

- **Victoria:** transport of oil waste increased by more than 12 times to 18,994 tonnes. Acid waste increased by 12 per cent to 24,194 tonnes. Soil/sludge waste dropped by 39 per cent to 478 tonnes. Paints, resins, inks, organic sludges also dropped by 28 per cent to 886 tonnes. Clinical and pharmaceutical waste increased from 2 to 47 tonnes.
- **Queensland:** transport during this period increased for acids to 44 tonnes, alkalis to 225 tonnes, inorganic chemicals to 5684 tonnes, paints to 450 tonnes, organic solvents to 108 tonnes and oils to 533 tonnes. Clinical and pharmaceutical waste increased slightly from 195 to 212 tonnes; while soil/sludge decreased significantly to 27 tonnes for the period.
- **Western Australia:** total quantity was down for this state to 2862 tonnes, with inorganic chemicals decreasing 23 per cent to 2655 tonnes. There was an increase in oils from 61 to 175 tonnes.
- **South Australia:** there was a significant drop in inorganic chemicals to 41 tonnes. Oil increased significantly from 27 to 2123 tonnes.
- **Tasmania:** the only waste transported was 88 tonnes of oils.
- **ACT:** there was a decrease in transport of putrescible/organic waste, oils and inorganic chemicals to 4644, 3082 and 66 tonnes respectively. Paints/resins, soil/sludge and clinical and pharmaceutical wastes increased by 136 per cent, 62 per cent and 73 per cent respectively.
- **Northern Territory:** the significant increase in waste transported from the Northern Territory (total 636 tonnes) was due to 599 tonnes of inorganic chemicals transported during this reporting period.

Highlights by waste type

- **Oils:** the amount of oils transported increased by around five times to 24,970 tonnes from 2018–2019, with Victoria contributing most (18,944 tonnes) to this increase.
- **Acids:** the total share of this waste type increased by 12 per cent to 24,249 tonnes from 2018–2019, with Victoria contributing most (24,195 tonnes) to this increase.
- **Inorganic chemicals:** the total quantity of this waste type decreased by 15 per cent from 2018–19 to 22,721 tonnes. Victoria accounted for most of the decrease, followed by South Australia, Western Australia and the ACT.
- **Clinical and pharmaceutical:** increased by 29 per cent from 2018–19 to 633 tonnes. The majority was from the ACT (368 tonnes), followed by Queensland (218 tonnes) and Victoria (47 tonnes).
- **Soil/sludge:** the total share of this waste type decreased by 35 per cent from 2018–19 (1146 tonnes) down to 740 tonnes, with Victoria (305 tonnes) and Queensland (193 tonnes) contributing to the majority of the decrease.

[NOTE: data may contain some minor discrepancies that are still under investigation.]

Detailed data is provided in tables 1–3.

Table 1: Number of consignment authorisations issued by NSW for the movement of controlled waste into NSW for the period 1 July 2019 to 30 June 2020

Reporting Year	Consignment authorisations issued
2016–17	1,307
2017–18	1,254
2018–19	815
2019–20	1,392

Table 2: Quantity of controlled waste into NSW for the period 1 July 2019 to 30 June 2020 – Tonnes per waste category by state/territory

Code	Description	VIC	QLD	WA	SA	TAS	ACT	NT	Total (T)
A	Plating & heat treatment	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.46
B	Acids	24,194.67	44.37	9.38	0.00	0.00	0.07	0.06	24,248.55
C	Alkalis	571.34	225.19	18.34	0.00	0.00	0.21	2.60	817.68
D	Inorganic chemicals	13,675.23	5,684.97	2,655.37	41.10	0.00	66.26	598.50	22,721.43
E	Reactive chemicals	4.28	0.00	0.00	0.00	0.00	0.00	0.00	4.28
F	Paints, resins, inks, organic sludges	885.90	450.07	0.00	0.00	0.00	158.29	4.12	1498.38
G	Organic solvents	227.52	107.70	2.63	28.07	0.00	20.13	0.67	386.72
H	Pesticides	1.16	1.45	0.00	0.00	0.00	0.00	4.85	7.46
J	Oils	18,944.35	533.52	174.95	2,123.05	88.20	3,082.25	23.55	24,969.87
K	Putrescible/ organic waste	3,354.35	21.71	0.00	0.00	0.00	4,643.52	0.00	8,019.58
L	Industrial washwater	NR	NR	NR	NR	NR	NR	NR	NR
M	Organic chemicals	186.51	334.30	0.00	0.00	0.00	29.30	1.19	551.3
N	Soil / sludge	478.38	27.36	1.12	24.75	0.00	208.60	0.00	740.21
R	Clinical & pharmaceutical	46.59	217.99	0.00	0.00	0.00	368.11	0.00	632.69
T	Misc	400.10	71.90	0.00	0.00	0.00	199.21	0.14	671.35
State Totals (tonnes)		62,970.84	7,720.53	2,861.79	2,216.97	88.2	8,775.95	635.68	85,269.96

NR = not recorded under this category

Table 3: Discrepancies in movements of controlled waste into NSW for the period 1 July 2019 to 30 June 2020

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

Table 4: Number of movements of controlled waste into NSW for the period 1 July 2019 to 30 June 2020

NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext Terr*	Total
N/A	2,890	657	282	81	4	1,563	41	0	5,518

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 2020.

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 2019–20 reporting period, Victoria issued 629 authorisations to move waste to another state or territory. This is an increase of 17% in approvals from the previous year. 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 14,456 tonnes.

Inorganic chemicals remain the largest percentage of the total tonnage transported to Victoria in 2019–20. The inorganic chemicals waste stream, consisting of metallic constituents, accounted for 47% of the total volume in 2019–20.

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 2019–20 (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.

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 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
2018–19	537
2019–20	629

Table 2: Quantity of controlled waste into Victoria for the period 1 July 2019 to 30 June 2020 – 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	N/A	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.27
B	Acids	0.38	N/A	0.00	0.20	20.30	8.00	0.00	0.00	0.00	28.88
C	Alkalis	6.28	N/A	86.08	0.00	0.00	0.00	0.00	0.00	0.00	92.36
D	Inorganic chemicals	683.00	N/A	5.00	4,955.51	1,117.16	0.00	116.76	0.00	0.00	6,877.43
E	Reactive chemicals	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F	Paints, resins, inks, organic sludges	111.78	N/A	1.42	47.00	1.83	0.00	0.00	0.00	0.00	162.03
G	Organic solvents	47.69	N/A	3.76	21.48	0.00	107.00	0.00	0.00	0.00	179.92
H	Pesticides	28.94	N/A		12.60	0.00	0.00	0.00	0.00	0.00	41.54
J	Oils	276.75	N/A	18.87	0.28	0.00	0.00	0.00	0.00	0.00	295.90
K	Putrescible/organic waste	561.48	N/A	20.87	0.00	0.00	0.00	0.00	0.00	0.00	582.35
L	Industrial washwater	199.61	N/A	13.02	0.00	0.00	3.00	0.00	0.00	0.00	215.63
M	Organic chemicals	51.77	N/A	101.04	0.00	0.00	0.00	0.00	0.00	0.00	152.81
N	Soil / sludge	328.71	N/A	2,292.85	33.81	587.80	0.00	0.00	0.00	0.00	3,243.17
R	Clinical & pharmaceutical	54.10	N/A	4.54	171.66	45.83	0.00	0.00	0.00	39.48	315.61
T	Misc	474.26	N/A	30.09	2.00	1,850.53	2.00	0.00	0.00	0.00	2,358.88
State Totals (tonnes)		2,824.73	N/A	2,577.54	5,244.54	3,623.72	120.00	116.76	0.00	39.48	14,546.77

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 2019–20 usually contained in Table 3 remains unavailable at the time of reporting. EPA is on track for these to be available for 20/21 reporting.

Table 3: Number of movements of controlled waste into Victoria for the period 1 July 2019 to 30 June 2020

NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext Terr*
707	N/A	222	383	201	21	6	19	10

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure Queensland by the 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 2020.

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 2019* (EP Reg). 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 12 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 2019–20 was 465, which is a 4.3% increase from 2018–19 (446). Despite the increase in the number of consignment authorisations, there was a significant decrease in the amount of controlled waste transported into Queensland from other Australian States and Territories.
- During 2019–20, nine interstate waste movements were identified where a consignment authorisation had not been approved.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by Queensland

Reporting Year	Consignment authorisations issued
2018–19	446
2019–20	465

Table 2: Quantity of controlled waste into Queensland for the period 1 July 2019 to 30 June 2020 – Tonnes per waste category by State/Territory

Code	Description	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext-Terr	Total
A	Plating & heat treatment	62.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	62.00
B	Acids	42.74	0.00	N/A	0.00	0.00	0.00	0.00	28.39	0.00	71.13
C	Alkalis	222.47	0.00	N/A	0.00	0.00	0.00	0.00	79.73	0.00	302.20
D	Inorganic chemicals	1,863.42	15.02	N/A	0.00	0.00	0.00	0.00	571.66	0.00	2,450.10
E	Reactive chemicals	7.75	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	7.75
F	Paints, resins, inks organic sludges	122.26	897.18	N/A	0.00	0.00	0.00	0.00	37.39	0.00	1,056.83
G	Organic solvents	983.37	86.00	N/A	114.76	102.00	0.00	0.00	1.33	0.00	1,287.46
H	Pesticides	244.47	52.32	N/A	0.00	61.25	0.00	0.00	2.00	0.00	360.04
J	Oils	25,955.30	0.00	N/A	0.00	0.00	0.00	67.00	2,550.19	0.00	28,572.49
K	Putrescible/ organic waste	5,918.63	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	5,918.63
L	Industrial washwater	4.57	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	4.57
M	Organic chemicals	1,910.00	962.32	N/A	0.00	0.00	7.00	0.00	9.40	0.00	2,888.72
N	Soil/ sludge	12,396.18	2.42	N/A	0.00	0.00	0.00	0.00	3.25	0.00	12,401.85
R	Clinical & pharmaceutical	2,090.38	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	2,090.38
T	Misc	3,879.43	0.00	N/A	0.00	0.00	0.00	0.00	106.61	0.00	3,986.04
State Totals (tonnes)		55,702.97	2,015.26	N/A	114.76	163.25	7.00	67.00	3,389.95	0.00	61,460.19

**Table 3: Discrepancies in movements of controlled waste into Queensland for the period
1 July 2019 to 30 June 2020 – 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	5%	4%	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%

* The Blank spaces in table 3 are a reflection of the fact that DES did not identify any instances of non-arrival of expired consignments in 2019–20.

**Table 4: Number of movements of controlled waste into Queensland for the period
1 July 2019 to 30 June 2020**

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
6143	135	N/A	6	10	1	3	194	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 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In Western Australia, 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*.
- 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* to ensure they are risk-based, streamlined and effective.

PART 1—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by Western Australia

Reporting year	Consignment authorisations issued
2018–19	12
2019–20	7

Table 2: Quantity of controlled waste into Western Australia for the period 1 July 2019 to 30 June 2020 – 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	0.00	0.00	0.00
C	Alkalis	0.00	0.00	0.00	N/A	0.00	0.00	0.00	172.00	0.00	172.00
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	20.81	0.00	20.81
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	111.97	0.00	111.97
K	Putrescible/ organic waste	0.00	0.00	0.00	N/A	0.00	0.00	0.00	122.84	0.00	122.84
L	Industrial washwater	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
M	Organic chemicals	32.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	32.00
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)		32.00	0.00	0.00	N/A	0.00	0.00	0.00	427.62	0.00	459.62

Table 3: Discrepancies in movements of controlled waste into Western Australia for the period 1 July 2019 to 30 June 2020 – 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 2019 to 30 June 2020

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
2	0	0	N/A	0	0	0	39	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 the Hon David Speirs, Minister for Environment and Water, for the reporting year ended 30 June 2020.

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 2019, South Australia as chair of the Controlled Waste NEPM Implementation Working Group, held an Implementation Working Group meeting (online) attended by states and territories to maintain consistency with other jurisdictions in the national tracking of controlled waste in a manner that underpins the desired environmental outcomes of the Measure.
- No implementation issues were reported during 2019–20.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by South Australia

Reporting Year	Consignment authorisations issued
2018–19	223
2019–20	205

Table 2: Quantity of controlled waste into South Australia for the period 1 July 2019 to 30 June 2020
– 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	0.41	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.41
B	Acids	30.81	0.00	0.00	0.00	N/A	0.00	0.00	2.00	0.00	32.81
C	Alkalis	44.55	17.53	0.00	0.00	N/A	0.00	0.00	3.23	0.00	65.31
D	Inorganic chemicals	11487.33	4681.85	0.00	0.00	N/A	265828.52	0.00	267.44	0.00	282265.14
E	Reactive chemicals	0.00	0.00	0.00	0.00	N/A	0.00	0.00	2.00	0.00	2.00
F	Paints, resins, inks organic sludges	199.44	2141.55	0.00	0.00	N/A	0.00	0.00	13.90	0.00	2354.89
G	Organic solvents	64.55	31.26	2.60	20.68	N/A	0.00	0.00	0.00	0.00	119.09
H	Pesticides	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.50	0.00	0.50
J	Oils	382.82	250.51	45.00	104.00	N/A	0.00	0.00	296.70	0.00	1079.03
K	Putrescible/organic waste	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00
L	Industrial washwater	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00
M	Organic chemicals	53.87	51.91	0.00	0.47	N/A	0.00	0.00	5.00	0.00	111.25
N	Soil/sludge	4628.45	9923.49	0.00	0.00	N/A	0.00	0.00	20.00	0.00	14571.94
R	Clinical & pharmaceutical	0.00	21.78	0.00	0.00	N/A	0.00	0.00	2.00	0.00	23.78
T	Misc.	192.69	501 units	0.00	0.00	N/A	0.00	0.00	998.93	0.00	1191.62
State Totals (tonnes)		17084.91	17119.88	47.60	125.15	0.00	265828.52	0.00	1611.70	0.00	301817.76

**Table 3: Discrepancies in movements of controlled waste into South Australia for the period
1 July 2019 to 30 June 2020 – percentage of total movements**

Discrepancy Type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
Consignment non-arrival	32%	57%	88%	54%	N/A	75%	0%	59%	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 2019 to 30 June 2020**

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
627	809	5	8	N/A	69	0	186	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 Roger Jaensch MP, Minister for the Environment, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

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*. There were no implementation issues arising.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by Tasmania

Reporting Year	Consignment authorisations issued
2018–19	27
2019–20	2

Table 2: Quantity of controlled waste into Tasmania for the period 1 July 2019 to 30 June 2020 – 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	N/A	0.00	0.00		0.00
B	Acids	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00		0.00
C	Alkalis	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00		0.00
D	Inorganic chemicals	0.00	5500.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	5500.00
E	Reactive chemicals	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00
F	Paints, resins, inks organic sludges	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00
G	Organic solvents	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00
H	Pesticides	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00
J	Oils	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00
K	Putrescible/organic waste	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00

Code	Description	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext-Terr*	Total (Tonnes)
L	Industrial washwater	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00
M	Organic chemicals	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00
N	Soil/sludge	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00
R	Clinical & pharmaceutical	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00
T	Misc.	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00
State Totals (tonnes)		0.00	5500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5500.00

Table 3: Discrepancies in movements of controlled waste into Tasmania for the period July 2019 to 30 June 2020 – 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 2019 to 30 June 2020

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
0	2	0	0	0	N/A	0	0	0

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure for the ACT by Rebecca Vassarotti MLA, Minister for the Environment, for the reporting year ended 30 June 2020.

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/Victoria for the treatment of clinical waste by Cleanaway Daniels.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by ACT

Reporting Year	Consignment authorisations issued
2018–19	57
2019–20	55

Table 2: Quantity of controlled waste into ACT for the period 1 July 2019 to 30 June 2020 – 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	630.62	87.60	60.50	0.00	0.00	0.00	N/A	0.00	0.00	778.72
K	Putrescible/organic waste	7.60	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	7.60
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	55.14	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	55.14
R	Clinical & pharmaceutical	250.11	42.50	0.00	0.00	0.00	0.00	N/A	0.00	0.00	292.61
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)		943.46	130.10	60.50	0.00	0.00	0.00	0.00	0.00	0.00	1134.06

Table 3: Discrepancies in movements of controlled waste into ACT for the period 1 July 2019 to 30 June 2020. 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 ACT for the period 1 July 2019 to 30 June 2020

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
875	13	6	0	0	0	N/A	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, Minister for Environment for the reporting year ended 30 June 2020.

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*.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Movement of controlled waste currently tends to be from the NT to other states. There is little importation of controlled waste into the NT. The type and volumes of wastes entering the NT in 2019–20 is consistent with previous years, being waste oils used in the production or for treatment at the local glycol treatment plant.

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.

Table 1: Number of consignment authorisations issued by Northern Territory

Reporting Year	Consignment authorisations issued
2018–19	10
2019–20	10

Table 2: Quantity of controlled waste into Northern Territory for the period 1 July 2019 to 30 June 2020 – 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	Alkalis	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	71.35	1031.91	0.00	0.00	0.00	N/A	0.00	1103.26
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	71.35	1031.91	0.00	0.00	0.00	N/A	0.00	1103.26

Table 3: Discrepancies in movements of controlled waste into Northern Territory for the period 1 July 2019 to 30 June 2020 – 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%	25%	55%	0%	0%	0%	N/A	0%

Table 4: Number of movements of controlled waste into Northern Territory for the period 1 July 2019 to 30 June 2020

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
0	0	4	49	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 from the Commonwealth, for the reporting year ended 30 June 2020.

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 31 March 2020, the Department of Agriculture, Water and the Environment published National Pollutant Inventory (NPI) data for 2018–19. This data details emissions from over 4000 industry facilities and represents the 21st year of NPI publication of emissions from industry.

Views of NPI data on data.gov.au, rose significantly from 3,717 views in 2018–19 to 9,888 views in 2019–20.

The Commonwealth fielded enquiries from industry in relation to reporting and chaired and provided secretariat support for the NPI Review Steering Committee.

The Commonwealth managed work on the review of the NPI. This work included:

- Chairing and providing secretariat support for one meeting of the NPI Review Steering Committee, comprising senior officials from the states and territories, to provide oversight and direction for the review process

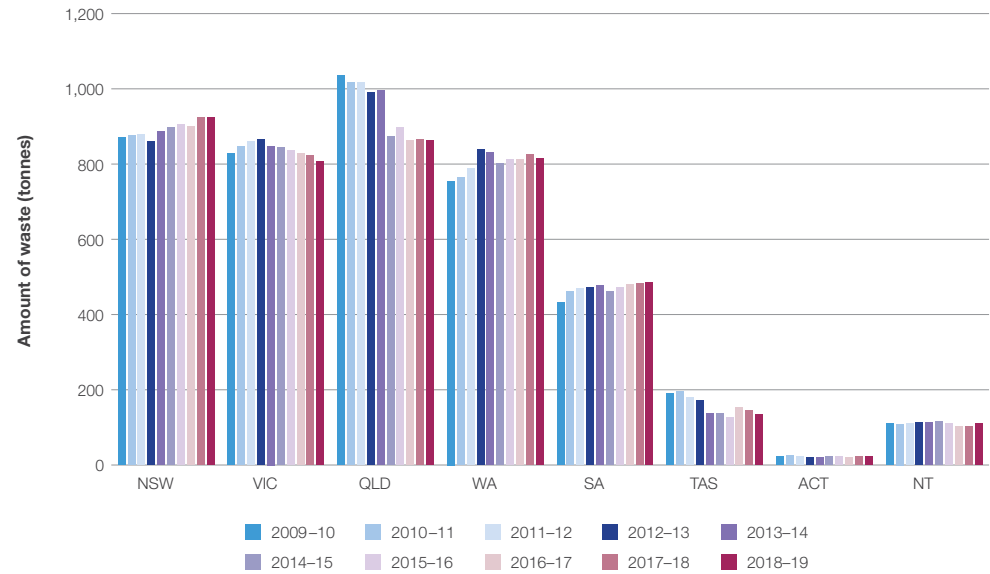
The Commonwealth acknowledges the valuable contribution of states and territories towards the Review.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The Commonwealth published the 2018–19 NPI data on 31 March 2020. The number of facilities reporting to the NPI reduced from 4,189 for the 2017–18 period compared to 4,157 for 2018–19.

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 2009–10.



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.

Table 1: Participation, feedback and effectiveness for the Commonwealth

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Public		
392,408 sessions on the NPI website (http://www.npi.gov.au/) 9,888 views of the NPI dataset on data.gov.au (https://data.gov.au/data/dataset/npi) up from 3,717 in 2018–19	- The number of user sessions increased from 361,202 in the previous year. - Software errors in the NPI database frequently affected public users who searched on the data.	- The Commonwealth responded to NPI-related calls through the free call phone line. 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. - Over 10 messages per month were sent in response to emails received in the NPI inbox.
Industry		
4,157 facilities reported for 2018–19 4,189 facilities reported for 2017–18 32 less reporters - No new sectors reporting - No confidentiality claims submitted	Industry reported some compatibility and usability problems with the NPI calculation tools.	The Commonwealth helped industry reporters with advice on first point of contact for assistance (i.e. state and territory NPI teams) and for support with reporting systems managed by the Commonwealth.
Government		
8 facilities from Commonwealth departments reported their 2018–19 data to the NPI in 2019–20	- The Department of Agriculture, Water and the Environment used NPI ammonia emissions data in its update of OECD agri-environmental indicators for Australia. - The Department of Agriculture, Water and the Environment used NPI data in the following ways: - for ongoing cost benefit analysis of regulating non-road diesel engines - for an assessment of dichloromethane use in Australia and its potential impacts on the ozone layer - environmental risk assessments of mercury and cadmium conducted for the National Industrial Chemicals Notification and Assessment Scheme (NICNAS) to inform Australia's ratification of the United Nations Minamata Convention on Mercury	The Commonwealth chaired and provided secretariat support for the NPI Review Steering Committee, which oversees the review of the NPI.

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 the Environment, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The New South Wales Environment Protection Authority (EPA) and the Department of Planning, Industry and Environment (DPIE) implements the National Environment Protection (National Pollutant Inventory) Measure (NEPM) through the provisions in Chapter 4 of the *Protection of the Environment Operations (General) Regulation 2009*, including:

- definition of reporting premises and substance thresholds
- reporting and record keeping requirements
- compliance and penalty requirements
- emission estimation techniques
- exemptions

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

National Pollutant Inventory facility emissions and transfers are reported for the 2018–19 reporting period. This is the most recent year for which facility reporting data has been finalised, provided by NSW to the Commonwealth and published.

The EPA and DPIE conduct online and face-to-face training to assist facility reporters with:

- understanding key elements of NPI reporting
- using the inventory online reporting system
- applying calculation and validation tools rather than emission estimation technique manuals to reduce time and improve accuracy.

The 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 12 new reporters in 2018–19. The EPA undertakes 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*.

Table 1: Participation, feedback and effectiveness for NSW

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Public		
The number of community member visits to the NPI website is recorded by the Commonwealth.	- 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. Some issues have been identified: - 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 contextual information to support accurate interpretation of the data.	N/A
Industry		
923 reports for 2018–19 (compared to 923 reports for 2017–18) 12 new reporters in 2018–19 - No confidentiality claims submitted	Training and support provided by the EPA/DPIE to facility reporters has improved data quality and reduced costs to NPI facility reporters.	- During 2018–19, the EPA trained approximately 50 reporters by phone and online, 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		
923 desktop audits of reports	- The EPA and DPIE continue 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.	- 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 and communications 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 2020.

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 2019/20, EPA has continuing concerns about the quality and timeliness of the NPI data provided by industrial facilities. Neither the WMP NPI nor NPI NEPM contains penalty provisions and the 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.

In the reporting year, EPA Victoria's NPI team put significant effort into incorporating the NPI reporting requirements into Victoria's new environment protection framework. The *Environment Protection Act 2017* (including *Environment Protection Amendment Act 2018* and *Environment Protection Amendment Act 2019*) introduces a general preventative environmental duty that is criminally enforceable. The *Environment Protection Act 2017* also gives EPA stronger powers and the ability to issue tougher penalties for environmental offences (including those related to the NPI reporting).

When the new *Environment Protection Act 2017* comes into operation on 1 July 2021, the NPI program will be implemented through the new *Environment Protection Regulations 2021*. Not complying with the NPI reporting requirements (including keeping records for 5 years) will become an infringeable offence.

The new *Environment Protection Act 2017* and *Environment Protection Regulations 2021* will contribute to making the NPI enforcement process in Victoria more straight forward and less time consuming.

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

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Participation, feedback and effectiveness for Victoria

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Public		
The number of community member visits to the National Pollutant Inventory website is recorded by the Commonwealth.	No specific feedback was received from the community.	
Industry		
806 published and 7 lodged reports for 2018/19; 822 published reports for 2017/18 and 1 lodged report for 2017/18; 10 submitted reports for 2018/19 were withheld from publication; 2 additional submitted reports for 2018/19 were returned to reporters, but still remain as drafts; 11 new reporting facilities; - No confidentiality claims submitted.	- Many industry reporters reported difficulties in using the NPI online reporting system, specifically the outdated NPI calculation tools, not compatible with commonly used versions of MS Excel. - Industry reporters also reported the NPI Online Reporting System being unsecure due to the old and weak encryption used. - While No NPI-specific audits were conducted in 2019/20 due to COVID-19 pandemic and EPA's transformation to new legislation, NPI information was provided to EPA officers as part of their licence compliance site visits and desk-top assessments.	94.8% of published and lodged reports for 2018/19 were submitted on time. 97.5% of published and lodged reports for 2018/19 were submitted online.
Government		
200 reports for 2018/19 were individually assessed and corrected; - No on-site audits; - No regulatory actions.	- 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 <i>Environment Protection Act 1970</i>; <i>Scheduled Premises Regulations</i>; and <i>Environment Protection (Vehicle Emissions) Regulations</i>.	

Queensland

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Queensland by the 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 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The purpose of the National Environment Protection (National Pollutant Inventory) Measure (NPI NEPM) is to disseminate a broad base of information on emissions of pollutants.
- 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

Reporting for the 2019–20 reporting period (table 1) incorporates data from the 2018–19 year which was received on 30 September 2019 and validated in the 2019–20 financial year.

Table 1: Participation, feedback and effectiveness for Queensland

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Public		
• The number of community member visits to the National Pollutant Inventory website is recorded by the Commonwealth.	• 10 news articles were circulated in the 2019–20 year compared to 26 in the 2018–19 year.	• NPI emissions and transfer reports were published through the Australian Government Open Data portal
Industry		
• 893 reports received for 2018–19 (862 published, 31 below threshold with no emission or transfer data reported) • 900 reports for 2017–18 (866 published, 34 below threshold no emission or transfer data reported) • 30 new reporters • No new sectors reporting • No confidentiality claims submitted	• Many reporters raised issues with the behaviour and functionality of both the online reporting system and the calculation tools. As a result, greater assistance from NPI staff was required to get NPI reports completed and submitted on time.	• 61% of facility reports were subject to desktop evaluation. • A detailed desktop audit of Queensland coal-fired power stations was undertaken. • 1 in-depth on-site NPI audit was conducted during the reporting period for machinery manufacturing.

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Government		
• 528 desktop audits • No on-site audits • No regulatory actions	• 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.	• Work on matching NPI facilities to environmental authority data continued and a PowerBi dashboard was developed.

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 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In Western Australia, the Department of Water and Environmental Regulation is responsible for implementing the National Environment Protection (National Pollutant Inventory) Measure under the *Environmental Protection Act 1986* through the *Environmental Protection (NEPM-NPI) Regulations 1998* and the *Environmental Protection Regulations 1987*. The implementation of the NEPM continues to be successful in Western Australia.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Participation, feedback and effectiveness for Western Australia

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Public		
The number of community visits to the National Pollutant Inventory website was recorded by the Commonwealth.	Environment groups and the media use National Pollutant Inventory NEPM data where environmental issues of concern are identified.	- Major article published on ABC news website “The Dirty Truth: How polluted is your postcode?”, which used the NPI dataset. - One query from the public following up from the ABC news article.
Industry		
839 reports for 2018–19 833 reports for 2017–18 21 new facilities - No new sectors reporting - No confidentiality claims submitted	- Widespread compliance with the online reporting system with 98 per cent uptake in WA for 2018–19. - 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 and well-regarded by reporters.	- Training sessions provided to industry reporters included information sessions, a webinar and online reporting training. - Reporters from other jurisdictions were invited and attended the webinar. - Continued to follow-up potential reporters in several industry sectors. - Reporters regularly reminded of reporting deadlines and supplied additional reporting information to that available on website.

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Government		
• 839 desktop audits • 9 detailed audits (COVID-19 prevented site visits for 2020 audits) • No regulatory actions	• The Department of Water and Environmental Regulation uses National Pollutant Inventory NEPM data to inform policy development, program implementation and to support regulatory activity. • National Pollutant Inventory NEPM data is used to identify and rank WA's major emitters with comparisons made with national data.	• 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 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In South Australia, the Environment Protection Authority (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 and the Steering Committee formed to oversee the review. Recent discussions have focussed on options for how to progress the review in light of the statutory 2019 NEPC Act Review. The review of the NPI is important to deliver the necessary improvements to the NPI program to ensure its longevity and utility in the future.
- A detailed air emissions inventory remains a strategic priority for both the NPI program and the 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 via <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

Table 1: Participation, feedback and effectiveness for South Australia

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Public		
The number of community member visits to the NPI website was recorded by the Commonwealth.	- There are occasional enquiries about NPI data from the general public and industry. - The media use NPI data.	- Prompt responses are made when NPI data is requested. - Participated in the GovHack 2019 open data competition as a data mentor.
Industry		
489 reports for 2018–19 482 reports for 2017–18 11 new reporters - No new sectors reporting - No confidentiality claims submitted	- 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.	- 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		
489 desktop audits - No on-site audits - No regulatory actions	- 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.	- 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 Roger Jaensch MP, Minister for Environment, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- Data reporting by industry is generally completed to an acceptable standard, the EPA Tasmania is trying to identify industry sectors to target for improvement.
- Resourcing of the program continues to present a challenge in Tasmania, limiting the opportunity to provide support to industry and community engagement activities.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

While EPA Tasmania experienced no major National Pollutant Inventory-related implementation issues in 2019–20, it has some concerns regarding the quality and timeliness of the National Pollutant Inventory data provided by industrial facilities.

Table 1: Participation, feedback and effectiveness for Tasmania

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Public		
• The number of community member visits to the NPI website was recorded by the Commonwealth.	• There was no feedback received during the reporting period.	• The COVID-19 pandemic stopped all community engagement.
Industry		
• 109 reports for 2019–20 • 140 reports for 2018–19 • No new reporters • No new sectors reporting • No confidentiality claims submitted	• Most industry reporters are able to consistently meet the requirements. A small number of reporters continue to struggle with the system and calculations required.	
Government		
• 158 desktop audits • No on-site audits • No regulatory actions	• The use of the NPI for assessment of air impacts is the main area of use.	• An improved process was implemented in the review of data submissions by industry to check for reporting errors. This has highlighted a need to further improve reporting and data verification within Tasmania.

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for the ACT by Rebecca Vassarotti MLA, Minister for the Environment, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- Access Canberra, within the Chief Minister and Economic Development Directorate, 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 NPI is implemented through the provisions of the ACT's *Environment Protection Act 1997*.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Participation, feedback and effectiveness for the ACT

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Public		
• The number of community member visits to the National Pollutant Inventory website was recorded by the Commonwealth.	• No specific feedback was received from the community.	
Industry		
• 22 reports for 2018–19 • 22 reports for 2017–18 • No new reporters • No new sectors reporting • No confidentiality claims submitted	• Due to staff turnover, training was welcomed by the industry for understanding of the NEPM and the online reporting system.	• 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		
• 22 desktop audits • No on-site audits • No regulatory actions	• No specific feedback was received from the government.	• 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, the Minister for Environment, for the reporting year ended 30 June 2020.

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 available 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

Table 1: Participation, feedback and effectiveness for the Northern Territory

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Public		
• The number of community visits to the National Pollutant Inventory website was recorded by the Commonwealth.	• No feedback was received from the public.	• Information about the NPI was updated on the new NT EPA website, and links were provided to the NPI website.
Industry		
• 109 reports for 2019–20 • 103 reports for 2018–19 • 3 new reporters • No new sectors reporting • No confidentiality claims submitted	• No reporters requested extension despite the COVID pandemic. • Reporters were provided training or assistance. • Most reporters who were assisted expressed their appreciation.	• All industry reports were submitted online. • Almost all industry reports were submitted on time.
Government		
• 15 desktop audits • No on-site audits • No regulatory actions	• Industries are encouraged to use NPI data and emission estimation technique (EET) manuals to estimate emissions when preparing environment impact assessments for current or proposed facilities.	• Participation of the NPI Officer in the NPI Intergovernmental Working Group remains important for the implementation of NPI in the NT.

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 from the Commonwealth, for reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

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 2020, there were 1,422 Covenant signatories, of which 1,380 (97.05%) 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. At the end of June 2020, 1,332 action plans had been lodged with APCO.

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.

Table 1: Number of covenant signatories by year

Reporting Year	Number of covenant signatories
2018–19	1,467
2019–20	1,422

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 2020.

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. This involves funding of \$337 million over four years from 2017–21 including a waste and recycling infrastructure package of \$168 million.

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 their five working groups for 2020–21, being Systems and Education, Materials Circularity, Design, National Packaging Targets and Container Deposit Scheme.
- The NSW Litter Prevention Strategy 2018–2022 (the Strategy) sets out an integrated program of initiatives. This includes the ‘five elements’ of litter prevention:
 1. Rewarding responsible behaviour, including implementing the Return and Earn container deposit scheme.
 - NSW has reduced eligible drink container litter volume by over 40 per cent since November 2017, primarily through the Return and Earn scheme. The community has embraced Return and Earn, with over 4 billion drink containers returned across the state since the scheme commenced on 1 December 2017.
 2. Education and awareness, including the ‘Don’t be a Tosser!’ education campaign.
 3. Infrastructure and clean up, including initiatives under litter prevention grant programs which has provided more than \$9 million for over 220 councils, regional organisations and community group projects.
 4. Regulation and enforcement, including community members reporting littering from vehicles through the ‘Report to EPA’ program:
 - The program, promoted through the ‘Don’t be a Tosser’ campaign, now has over 50,000 registered community reporters and has resulted in over 44,000 littering fines being issued since it was introduced in February 2015.
 5. Evaluation and monitoring, to track changes in litter levels and changing community attitudes to litter.
- The Litter Prevention Strategy has been working towards the Premier’s Priority target to reduce the volume of litter in NSW by 40 per cent by 2020 (from a 2013–14 baseline). The target was backed up with a \$50 million funding commitment from 2012–2021 under the Waste Less, Recycle More initiative. Provisional 2019–20 National Litter Index Results indicate that this target has been met with a 43 per cent reduction in litter volume.
- The introduction of the Return and Earn scheme has had a significant and sustained positive impact on beverage container litter. NSW has seen up to a 57 per cent decrease in beverage container litter volume and an annual average of 40 per cent reduction compared to pre-scheme litter levels.
- In February 2019 the NSW Government published the NSW Circular Economy Policy Statement, which sets the ambition and approach for a circular economy in NSW and provides a framework for implementing initiatives throughout the product life cycle – from design, manufacturing, and retail to end-of-life-disposal.

In addition to the above initiatives, the NSW Government is taking strong action to reduce plastic in our environment by developing a comprehensive NSW Plastics Plan. A discussion paper 'Cleaning Up Our Act: Redirecting the Future of Plastic in NSW' was released for public consultation, and feedback closed on 8 May 2020. The Government is currently reviewing the feedback and finalising the Plastics Plan. When complete, the NSW Plastics Plan will become a part of the NSW Government's commitment to achieving a circular economy.

The NSW Government is also developing a 20-Year Waste Strategy to help build a better resource recovery system in NSW. A 20-Year Waste Strategy issues paper was released for consultation in March-April 2020. Submissions have closed and are being reviewed. Feedback on the draft 20-Year Waste Strategy will be sought in 2021.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

NSW is continuing to work closely with the Australian Packaging Covenant Organisation (APCO) to ensure business compliance with the NEPM. NSW is working with the Commonwealth, other jurisdictions and APCO to develop and implement an industry behaviour change engagement strategy to better engage with organisations on their obligations under the co-regulatory framework.

Recovery data

Nil

Supporting data

Nil

Complaints, investigations and prosecutions

Nil

Statement of interpretation of the information

NSW has continued to focus on the reduction of packaging waste through Waste Less, Recycle More.

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 2020.

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).

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.

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.

At 30 June 2020, there were 1510 signatories to the Covenant nationally. Victoria has 545 signatories, making 36% of all signatories.

Table 1: Number of covenant signatories by year in Victoria

Reporting Year	Number of covenant signatories
2018–19	519
2019–20	545

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 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/household-waste/local-government-kerbside-recycling>

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Queensland by the Hon 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 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The primary purpose of the National Environment Protection (Used Packaging Materials) Measure (UPM NEPM) is to establish a statutory framework to ensure that signatories to the Australian Packaging Covenant are not competitively disadvantaged in the marketplace as a result of fulfilling their signatory commitments.

No issues arose during the reporting year.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

During the 2019–20 reporting year, the total number of brand owner signatories in Queensland increased by five.

Table 1: Number of covenant signatories by year for Queensland

Reporting Year	Number of covenant signatories
2018–19	121
2019–20	126

Recovery Data

As agreed in August 2015, jurisdictions no longer undertake brand owner audits. From 1 July 2016, this became the responsibility of industry, through the Australian Packaging Covenant Organisation.

Supporting Data

Nil response.

Complaints, Investigations and Prosecutions

No complaints were received, investigations commenced, or prosecutions undertaken during the reporting period.

Statement of Interpretation of the Information

Nil response.

Local Government Data

Local government data for the 2019–20 reporting period is available in the annual Recycling and Waste in Queensland Report 2019.

The Report is available at [Recycling and Waste in Queensland report 2019 \(www.gld.gov.au\)](http://www.gld.gov.au).

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Western Australia by the Hon Stephen Dawson MLC, Minister for Environment; Disability Services; Electoral Affairs, for the reporting year ended 30 June 2020.

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 2019–20.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

No compliance activity undertaken during the reporting period.

Table 1: Number of covenant signatories by year by Western Australia

Reporting Year	Number of covenant signatories
2019–20	102

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, and no investigations or prosecutions were undertaken.

Statement of Interpretation of the Information

Not applicable.

Local Government Data

Local government data will be available at www.dwer.wa.gov.au.

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 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In 2019–20, South Australia continued to work with the Australian Packaging Covenant Organisation (APCO), industry, the Commonwealth and other jurisdictions to pursue national consistency in the attainment of the goal of the NEPM. The Environment Protection Authority (EPA) met with the Government Officials Group (GOG) and APCO regularly during 2019–2020 to develop a Behaviour Change Program for brand owners under the NEPM to pursue a consistent national approach when administering the NEPM.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

South Australia continues to work with APCO to ensure signatories continue to meet their obligations and requirements under the Australian Packaging Covenant (the Covenant). The development of a Behaviour Change Program will provide a renewed focus on brand owners achieving NEPM goals and desired environmental outcomes.

Table 1: Number of covenant signatories by year by South Australia

Reporting Year	Number of Covenant signatories
2018–19	79
2019–20	83

Recovery Data

There are currently no brand owners reporting to the EPA in South Australia and, therefore, no requirements for audits under clause 16. The development of a Behaviour Change Program is focused on encouraging brand owners to become signatories to the Covenant.

Supporting Data

The purpose of the development of a Behaviour Change Program will provide a consistent national approach to pursue brand owners identified under the 2018 Brand Owner Audit.

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 continues 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 including the development of a Behaviour Change Program for brand owners under the NEPM. The program will be run jointly between APCO and GOG member jurisdictions. The objective of this program is for businesses to become signatories to the Covenant, without further enforcement actions required by state and territory jurisdictions.

Local Government Data

Available at [2019-20 NEPM Annual Report – Local Government Data \(https://www.epa.sa.gov.au/environmental_info/waste_recycling/waste-management\)](https://www.epa.sa.gov.au/environmental_info/waste_recycling/waste-management) from end September 2021.

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Tasmania by the Hon Roger Jaensch MP, Minister for the Environment, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The NEPM is a State policy under the *State Policies and Projects Act 1993*.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The NEPM is a State policy under the *State Policies and Projects Act 1993*.

Table 1: Number of covenant signatories by year by Tasmania.

Reporting Year	Number of covenant signatories
2018–19	21
2019–20	19

Recovery Data

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

Supporting Data

No surveys completed during the reporting period.

Complaints, Investigations and Prosecutions

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

Statement of Interpretation of the Information

Not applicable.

Local Government Data

Year (reporting period): 1 July 2018 – 30 June 2019

Total Percentage of total Councils: 34.5% Total

Total number of Councils reporting: 10 of 29

Northern Tasmanian Waste Management Group – 3 councils reported

Cradle Coast Waste Management Group – 2 councils reported

Southern Waste Strategy Authority – 5 councils reported

Independent Councils – 0 council 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	0
MGB 240L	Comingled recyclables	Fortnightly	6
MGB 140L & 240L options	Comingled recyclables	Fortnightly (for both options)	4

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 91,411
Non-Residential 15,763

Number of households/premises serviced by recycling collections:

Kerbside: Drop off (Optional):
Residential 92,889
Non-residential 6,137

Average premises fee charged by Councils for recycling services:

Residential \$ 121.32 Non-residential \$ 142.07

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

Residential \$ 69.75 Non-residential \$ 76.62

Proportion of household/premises with access to a recycling service: 83%

Average participation rate: 80%

Table 1: Amounts of materials collected at the kerbside, sent for secondary use/energy recovery and contamination (waste) disposed of to landfill 1 July 2018—30 June 2019

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"		19,909	
Total non packaging paper i.e. paper mixed, paper white office, newspaper and magazines "		6,175	
Total glass		12,270	
Total plastics		2,373	
Total aluminium (cans)		468.1	
Total steel (cans, tins etc.)		722.82	
TOTAL	49,292	41,917	7,374.92

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 ACT by Rebecca Vassarotti MLA. Minister for the Environment, for the reporting year ended 30 June 2020.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The *Waste Management and Resource Recovery Act 2016* (the Waste Act) provides a legislative framework for managing waste activities in the ACT. 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.
- The Waste Act provides the Government with powers to establish mandatory codes of practice. A new code of practice has been developed to implement the National Environment Protection (Used Packaging Material) Measure (UPM NEPM) which will come into force in the first quarter of the 2020-21 financial year and meet the ACT's obligation established under the *National Environmental Protection Council Act 1994*.
- The introduction of the code of practice will increase the power of the ACT Government to regulate non-compliant brand owners.
- Additionally, 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 phase out selected single-use plastics in the Territory. Following consultation with businesses and the public in 2019, the ACT Government has developed the Plastic Reduction Bill 2020, which proposes commencing with bans on single-use plastic cutlery, single-use plastic stirrers, and single-use expanded polystyrene takeaway food and beverage containers no earlier than mid-2021. An exposure draft of this Bill has been published on the website for comment and is scheduled to be considered in the Legislative Assembly in the 2020–21 financial year.
- Other single use and problematic items will be identified and phased out in future tranches.
- As a signatory to the Australian Packaging Covenant the ACT regularly attends Australian Packaging Covenant Organisation (APCO) working groups and governance meetings, engaging with other jurisdictions on plastic and packaging waste reduction. To support the implementation of the National Packaging Targets (including the Meeting of Environment Ministers endorsed target of 100% of Australian packaging being recyclable, reusable and compostable packaging by 2025), the ACT government is represented on the Australian Packaging Covenant Organisation's cross-industry collaborative forums where relevant.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Reporting Year	Number of covenant signatories
2018–19	9
2019–20	8

APCO have advised that during the 2019–20 reporting period, one of the ACT member signatories has chosen to no longer be a signatory to the Australian Packaging Covenant.

Recovery Data

Maximising the recovery and re-use of resources is an object of the Waste Act. Data concerning the volumes and types of materials recovered is being collected through quarterly reporting under the Waste Act. The data collected is currently comprised of aggregated quarterly totals consisting of a general source, waste type and tonnage for the quarter.

The new code of practice that will come into force in the first quarter of the 2020–21 reporting period will give the ACT Government greater regulatory power. This includes the requirement for businesses to submit an action plan and report data quarterly on their packaging waste and related activities.

Additionally, in 2021 the ACT is looking to upgrade its waste data collection system. Once established, the new system will capture more comprehensive information including data on the types of plastic waste processed as well as tracking the movement and processing of waste.

Supporting Data

No retailer survey of packaged products was conducted in the ACT in 2019–20.

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 2019–20 with respect to the UPM NEPM.

Statement of Interpretation of the Information

In 2019–20 the ACT continued to work with the community and industry to encourage waste avoidance and increase recycling rates. Significant progress has been achieved towards the implementation of the UPM NEPM through developing a code of practice and in progressing to phase out certain single-use and problematic plastic products through the *Plastic Reduction Bill 2020*. These actions, along with the CDS support the management of used packaging in the Territory and the overarching goal of full resource recovery.

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, Minister for Environment for the reporting year ended 30 June 2020.

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 *Environment Protection (Beverage Containers and Plastic Bags) Act 2011* (the Act) regulates the supply of single use, non-biodegradable plastic bags and established a plastic bag ban from September 2011 that prohibits retailers from providing customers with lightweight polyethylene shopping bags with handles. The Act also established the container deposit scheme (CDS) to reduce beverage container waste and increase resource recovery, reuse and recycling. The CDS commenced in January 2012.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

- As a result of the 2018 APCO Brand Audit, there has been one 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 2019–20 under clause 18.
- Of the 17 councils within the Northern Territory, in 2019–20 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.
- 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.

Table 1: Number of covenant signatories by year by the Northern Territory

Reporting Year	Number of covenant signatories
2018–19	1
2019–20	1

Recovery Data

A total of 126,222,575 approved beverage containers were sold in the Northern Territory during 2019–20. Of these, 100,848,173 containers were returned by a collection depot to a CDS coordinator. This equates to 80% of all containers sold were returned, recycled and reused through the CDS, thereby diverted from landfill and litter. This slight decrease in return rate, down from 84% in 2018–19, is a continuing trend of high return rates and is likely to be attributed to increased environmental awareness, community participation and access to recycling facilities.

Supporting Data

Landfill recovery data includes where the landfill also operates a transfer station. Waste types are collected in dedicated bins and diverted from landfill into recycling and recovery. In 2019–20, 540 tonnes of cardboard was recovered and recycled by landfills in the NT. Note this data relates to four of the largest landfills in the NT servicing over 80% of the NT.

In addition, 6579 tonnes of material was recovered and recycled through the NT's container deposit scheme including over 5000 tonnes of glass (Table 2).

Table 2. Volume of material returned in the NT's container deposit scheme

Annual Summary		
Container material	Weight returned (tonnes)	Return rate (%)
Aluminium	653	77.23
PET	553	83.97
HDPE	34	33.65
Glass	5,285	90.42
LPB	53	60.08
Steel	2	48.98
Other	0	0.00
Total	6,579	79.90

Complaints, Investigations and Prosecutions

N/A

Statement of Interpretation of the Information

N/A

Local Government Data

N/A



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