

2026

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

ELEVENTH ASSEMBLY

**NATIONAL ENVIRONMENT PROTECTION COUNCIL
ANNUAL REPORTS 2020-2021**

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



annualreport

2020–2021

Annual Report 2020–21

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Members of the National Environment Protection Council

From 1 July 2020 to 30 June 2021

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 Meahgan Scanlon MP Minister for Environment and Great Barrier Reef	12 November 2020 – 30 June 2021
	The Hon Leanne Enoch MP Minister for Environment and Great Barrier Reef	12 December 2017 – 11 November 2020
Western Australia	The Hon Amber-Jade Sanderson MLA Minister for Environment	19 March 2021 – 30 June 2021
	The Hon Stephen Dawson MLC Minister for Environment	17 March 2017 – 19 March 2021
South Australia	The Hon David Speirs MP Minister for Sustainability, Environment and Conservation	Full year
Tasmania	The Hon Roger Jaensch MP Minister for Environment	Full year
Australian Capital Territory	Ms Rebecca Vassarotti MLA Minister for the Environment	4 November 2020 – 30 June 2021
	Mr Mick Gentleman MLA Minister for the Environment and Heritage	31 October 2016 – 3 November 2020
Northern Territory	The Hon Eva Lawler MLA Minister for Environment	Full year

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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.

Ms Karen Moloney was the NEPC Executive Officer for the 2020–2021 reporting year with support provided by Mr Nick Blong as Acting NEPC Executive Officer.

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 Environment Protection Agencies may be asked to take a role in progressing agenda items for the Senior Officials/NEPC Committee groups.
- New Zealand and the Australian Local Government Association are represented by invitation to 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 2020–2021 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 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> 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).
Queensland	The NEPM is implemented under the <i>Environmental Protection Act 1994</i>, the <i>Environmental Protection Regulation 2019</i>, and the <i>Environmental Protection (Air) Policy 2019</i>.
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 Tasmanian Air Quality Strategy 2006. - Implementation is through the Environment Protection Policy (Air Quality) 2004 and the <i>Environmental Management Pollution Control Act 1994</i>.
Australian Capital Territory	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 2004</i>.

Implementation issues arising

Table 2 summarises the implementation issues that arose throughout the 2020 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	Previous desktop analysis has shown that air toxics are not an issue for the ACT airshed and no monitoring sites have been identified.
Northern Territory	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 2020–21 reporting period including ambient monitoring of benzene, toluene, xylenes and formaldehyde using DOAS instrumentation 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 developed any specific strategies or actions to manage them.

Repeat identification of stage 1 and stage 2 sites

No new monitoring sites were identified during the reporting period.

PART 4—ASSESSMENT OF NEPM EFFECTIVENESS

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

Following internal consultations reviewing the need for the Air Toxics NEPM in 2018 and 2019, jurisdictions agreed the Air Toxics NEPM fulfils a useful role, but may benefit from further work. The proposed National Clean Air Agreement (NCAA) 2021–2023 work plan includes a project to further review the current state of air toxics in Australia and options for management.

PART 5—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

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NEPC report on the implementation of the

National Environment Protection (Ambient Air Quality) Measure





National Environment Protection (Ambient Air Quality) Measure

PART 1—GENERAL INFORMATION

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, 18 May 2021.

NEPM goal (or purpose)

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

- a) for carbon monoxide, nitrogen dioxide, photochemical oxidants (as ozone), lead and particles (as PM₁₀ and PM_{2.5})—to achieve the national environment protection standards specified in table 1 of Schedule 2;
- b) for sulfur dioxide—to achieve the national environment protection standards specified in table 1 of Schedule 2, and from 1 January 2025 to achieve the national environment protection standard specified in table 1A of Schedule 2;
- c) for particles as PM_{2.5} from 1 January 2025—to seek to achieve the further reductions in maximum concentrations specified in table 2 of Schedule 2.

Note: The goal for particles as PM_{2.5} from 1 January 2025 will provide a framework for continuous improvement and facilitate a review of the PM_{2.5} standard.

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 minimises the risk of adverse health impacts from exposure to air pollution.

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).

PART 2—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

This part provides a summary of jurisdictional reports on 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 2019</i>, and the <i>Environmental Protection (Air) Policy 2019</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 Environment Protection Policy (Air Quality) 2004, the <i>Environmental Management and Pollution Control (Distributed Atmospheric Emissions) Regulations 2007</i> and the Tasmanian Air Quality Strategy 2006. - The NEPM is a state policy under the <i>State Policies and Projects Act 1993</i>.
Australian Capital Territory	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 a number of jurisdictions during the reporting period.

Table 2 summarises the implementation issues that arose throughout the 2020 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	- New monitoring stations began operating in Penrith, Lidcombe and Morriset. - Seven of 36 stations recorded less than 75% data availability for pollutants over any three-month period.
Victoria	Data capture targets were not met at a number of stations due to relocation in one case, and instrument faults at the remainder.
Queensland	A monitoring station in Mount Isa was decommissioned in June 2020 and there were equipment faults during the third quarter at Springwood.
Western Australia	No issues reported.
South Australia	The Kensington station was removed from the monitoring network and the Elizabeth station was temporarily decommissioned due to safety issues.
Tasmania	COVID lockdown restrictions affected maintenance and service visits to monitoring stations from April to July 2020.
Australian Capital Territory	No issues reported.
Northern Territory	Particulate monitoring began at a new station in Katherine from September 2020.

PART 3—JURISDICTIONAL REPORT ON ACTIVITIES UNDER THE NEPM

Work to review and strengthen the Ambient Air Quality standards for ozone, nitrogen dioxide and sulfur dioxide was completed in 2020. This resulted in new and more stringent standards that were endorsed by Environment Ministers at their meeting in April 2021.

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.

The *Royal Commission into National Natural Disaster Arrangements final report* (<https://naturaldisaster.royalcommission.gov.au/publications/royal-commission-national-natural-disaster-arrangements-report>) (30 October 2020) subsequently recommended nationally consistent air quality information and health advice be developed, as well as the development of a national smoke forecasting capability. In November 2020, the Commonwealth, state and territory governments endorsed a new framework that provides nationally consistent air quality advice, actions and health warnings across jurisdictions.

States and territories will implement new reporting categories and health messaging in their jurisdictions. Some jurisdictions require significant work to change their reporting and will require more time to implement the changes.

While this work will not impact upon the reporting categories for the AAQ NEPM, it departs from the averaging conventions (24-hour averages) of the AAQ NEPM.

A number of jurisdictions experienced improved air quality from March in the 2020 calendar year. Air quality trends were defined by the impact of COVID-19 lockdowns, resulting in reduced vehicle traffic and an associated reduction in some air pollutants.

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.

WA noted that their monitoring site closest station to the coast has been recording a relatively large number of exceedances of the daily PM₁₀ standard, which are due to sea-salt from the ocean. While these exceedances are assessable according to the current classification, marine aerosol is not harmful to human health.

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 a number of jurisdictions given pressures from a growing population, urban expansion, increased economic activity and the associated increase in motor vehicle use.

PART 5—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 2:

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NEPC report on the implementation of the

National Environment Protection (Assessment of Site Contamination) Measure





National Environment Protection (Assessment of Site Contamination) Measure

PART 1—GENERAL INFORMATION

NEPM details

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

Made by Council: 10 December 1999.

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

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 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 www.legislation.vic.gov.au. - 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 of PFAS contamination. The NEMP was updated during the reporting period and version 2.0 published in May 2020, with further updates also underway. The PFAS NEMP continues to assist major landowners, operators and industry who are responding to contamination risks, as well as providing consistent national standards and guidance for communities and governments across multiple jurisdictions.

Some jurisdictions have noted that updating the NEPM to include PFAS, and also amending NEPC processes to allow the easier addition of criteria for emerging contaminants, would be desirable.

This adds to a number of issues consistently raised by jurisdictions, including expanding the NEPM to include site remediation and management, and developing and implementing a consistent framework for adopting new EILs (Ecological Investigation Levels) into the NEPM, that could be considered during the next review.

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

Table 2: Summary of implementation issues arising

Jurisdiction	Summary of implementation issues arising
Commonwealth	- 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.
Victoria	- Continued to question the adequacy of the Health Investigation Levels (HILs) for lead in soil for the protection of human health. - Noted the need to continually update guidance to minimise discrepancies in subsequently developed policies and frameworks.
Queensland	Again, noted that the lack of adequate guidance for particular common types of contamination including fluorinated organic chemicals that are now commonly encountered on contaminated sites is limiting the effective implementation of the NEPM.
Western Australia	- 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	Again, raised the need to plan for the required 10-year review of the NEPM to ensure that it incorporates new scientific knowledge and updated technical information and maintain credibility as a protector of the environment and human health.
Tasmania	Supports the continued development of the NEPM including guidance on managing emerging contaminants of concern and ongoing review/ updating of criteria.
Australian Capital Territory	Requested changes to NEPC processes to allow for the inclusion of criteria for emerging contaminants outside of the formal review process.
Northern Territory	There are increases in the inappropriate use of the ASC NEPM in illegal dumping matters to justify the illegal dumping of waste.

PART 3—JURISDICTIONAL REPORT ON ACTIVITIES UNDER THE NEPM

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 perfluorinated compounds such as PFOS and PFOA, primarily from firefighting training activities.

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

PART 4—ASSESSMENT OF NEPM EFFECTIVENESS

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

The 2013 amendments have been 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:

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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 implemented administratively. - 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>.
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>.
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>.
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 2020–21 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. - During the reporting period, Victoria did not operate a smoky vehicle reporting scheme due to COVID-19 restrictions and resource diversion to support the broader pandemic response.
Queensland	No issues reported.
Western Australia	No issues reported.
South Australia	No issues reported.
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

Jurisdictions continue to run a number of programs to monitor and reduce emissions from their diesel fleets, including smoky vehicle reporting programs, on-road measurement campaigns, requirements for construction plant and equipment, upgrades to government vehicle and bus fleets and emissions testing and repair programs.

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

PART 4 – ASSESSMENT OF NEPM EFFECTIVENESS

While there are 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:

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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.

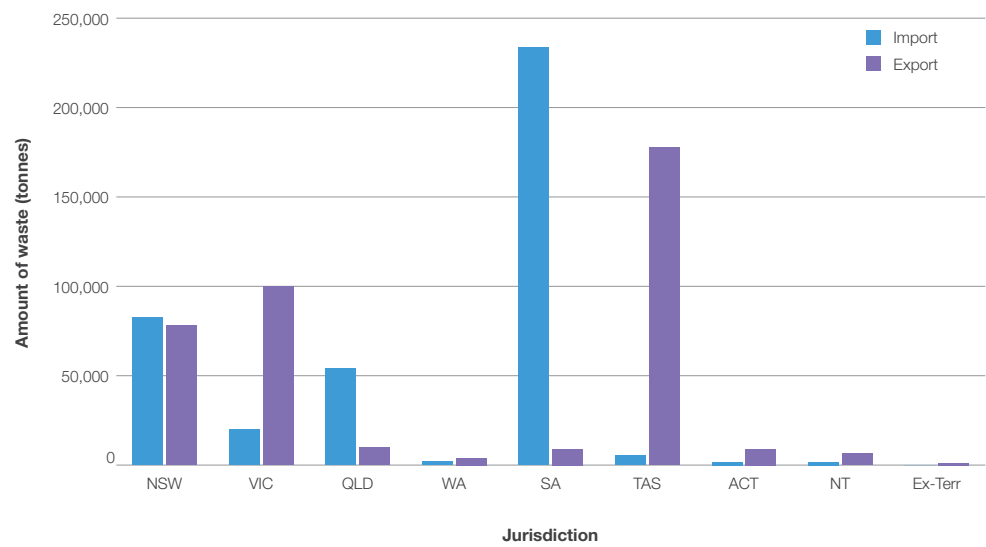
Table 2: Summary of total movements of controlled waste within Australia, imports by states and territories for the period 1 July 2020 – 30 June 2021

Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ex-Terr	Total
A	Plating & heat treatment	5.04	0.00	1.07	0.00	0.00	0.00	0.00	0.00	n/a	6.11
B	Acids	21345.89	235.53	204.01	0.00	59.12	0.00	0.00	0.00	n/a	21852.56
C	Alkalis	973.82	61.73	103.04	109.00	48.98	0.00	0.00	0.00	n/a	1296.57
D	Inorganic chemicals	15523.14	3133.91	1480.25	0.00	183036.68	5500.00	2.19	0.00	n/a	208676.19
E	Reactive chemicals	7.25	36.30	0.00	0.00	0.40	0.00	0.00	0.00	n/a	43.95
F	Paints, resins, inks, organic sludges	2617.77	619.26	367.85	76.88	285.50	0.00	0.00	0.00	n/a	3967.27
G	Organic solvents	612.43	998.08	784.86	0.00	98.35	0.00	0.00	0.00	n/a	2493.72
H	Pesticides	10.85	56.37	188.19	0.00	0.42	0.00	0.00	0.00	n/a	255.83
J	Oils	28176.58	933.43	30138.97	254.36	1528.21	0.00	431.90	701.60	n/a	62165.06
K	Putrescible/organic waste	8923.34	985.28	3941.79	3.66	0.00	0.00	44.10	0.00	n/a	13898.17
L	Industrial washwater	0.00	2371.34	0.00	0.00	0.00	0.00	0.00	0.00	n/a	2371.34
M	Organic chemicals	617.23	821.24	2209.68	39.23	77.21	0.00	0.00	0.00	n/a	3796.60
N	Soil/sludge	717.17	7084.61	5920.87	0.00	24209.71	0.00	76.56	0.00	n/a	38008.92
R	Clinical & pharmaceutical	2350.52	412.83	3691.80	0.00	841.50	0.00	510.61	0.00	n/a	7537.29
T	Misc.	587.39	1531.54	4152.48	0.00	22641.20	0.00	1.80	0.00	n/a	28912.61
	Total (tonnes)	82468.42	19019.46	53184.86	483.12	232827.29	5500.00	1065.36	701.60	n/a	395282.16

Table 3: Summary of total movements of controlled waste within Australia, exports by states and territories for the period 1 July 2020–30 June 2021

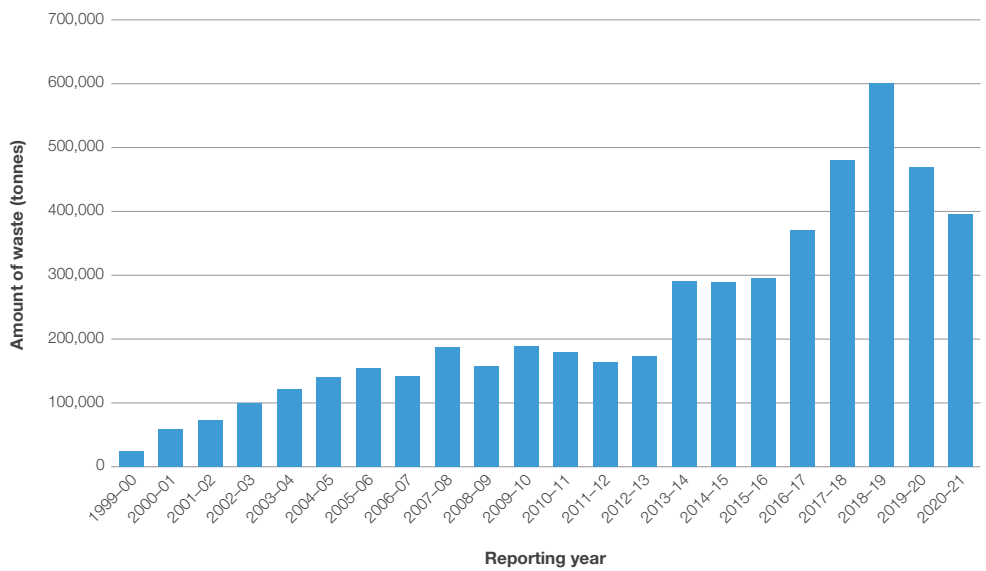
Code	Description	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ex-Terr*	Total
A	Plating & heat treatment	0.78	0.29	5.04	0.00	0.00	0.00	0.00	0.00	0.00	6.11
B	Acids	441.74	21340.82	7.87	9.59	36.74	8.00	0.10	7.70	0.00	21852.56
C	Alkalis	168.03	427.42	587.85	0.00	0.00	0.00	0.55	112.72	0.00	1296.57
D	Inorganic chemicals	6440.89	10865.45	8323.32	1947.96	1902.57	177168.29	681.83	1345.88	0.00	208676.19
E	Reactive chemicals	11.30	5.02	2.10	0.00	25.00	0.00	0.13	0.40	0.00	43.95
F	Paints, resins, inks, organic sludges	546.25	2813.00	162.54	44.10	37.84	0.00	265.50	98.04	0.00	3967.27
G	Organic solvents	1339.23	471.40	144.71	1122.40	322.33	0.00	15.15	78.50	0.00	2493.72
H	Pesticides	155.16	10.76	0.08	9.00	80.40	0.00	0.01	0.42	0.00	255.83
J	Oils	29532.04	21653.46	967.58	1291.23	5083.99	0.00	1577.11	2059.65	0.00	62165.06
K	Putrescible/organic waste	4970.87	2520.51	5.28	0.30	0.00	0.00	6397.55	3.66	0.00	13898.17
L	Industrial washwater	766.18	0.00	0.00	8.00	1597.16	0.00	0.00	0.00	0.00	2371.34
M	Organic chemicals	1358.34	2008.96	338.62	7.00	51.75	10.00	3.84	18.09	0.00	3796.60
N	Soil/sludge	23155.69	14226.43	132.24	260.94	56.81	0.00	168.52	8.29	0.00	38008.92
R	Clinical & pharmaceutical	3968.20	1693.66	260.99	831.49	426.04	0.00	314.36	0.00	42.52	7537.26
T	Misc.	5674.59	20491.41	37.91	7.00	113.00	0.00	288.56	2300.14	0.00	28912.61
	Total (tonnes)	89529.29	98528.59	10976.13	4539.01	9733.63	177186.29	9713.21	6033.49	42.52	395292.16

Figure 1: Tonnage of controlled waste moved within Australia 2020–21*

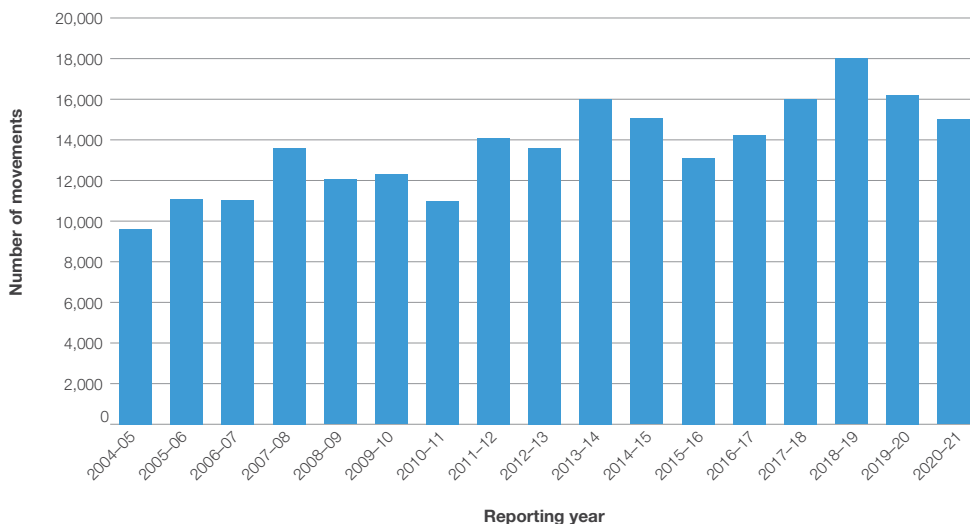


* Note: The scale of the vertical axis does not allow for the 285.09 tonnes of waste exported from Australia's External Territories to be visually represented).

Figure 2: Tonnage of controlled waste moved within Australia 1999–2021



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

Figure 3: Number of movements of controlled waste within Australia 2004–21*

* 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:

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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 2019–20 (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 2019–20 NPI data in March 2021. - Leading the current review of the NPI.
New South Wales	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.
Victoria	- NPI data quality and NEPM enforceability will continue to be raised during the review. - NPI reporters were offered a two-month extension to submit their 2019–20 reports due to COVID-19 restrictions in metropolitan and regional Victoria.
Queensland	Issues with the NPI online reporting system and calculation tools resulted in the Queensland Government developing its own Excel-based combustion calculation tools to support reporters.
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. - Updated NPI emissions estimation techniques and other resources continue to be a critical need.
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 was 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 significantly decreased from 392,408 in 2019–20 to 137,847 in 2020–21, likely due to server configuration and software errors in the NPI website and database. There were 6,560 views of the NPI dataset on the data.gov.au website.

The use of the NPI database by non-government organisations and the media, often focusing on specific industry sectors or facilities, is increasing. Improving contextual information and interpretation of NPI data may facilitate better understanding within the community.

On-line reporting

Some industry users experienced compatibility problems with the NPI Online Reporting System. Industry also reported some compatibility and usability problems with the NPI calculation tools.

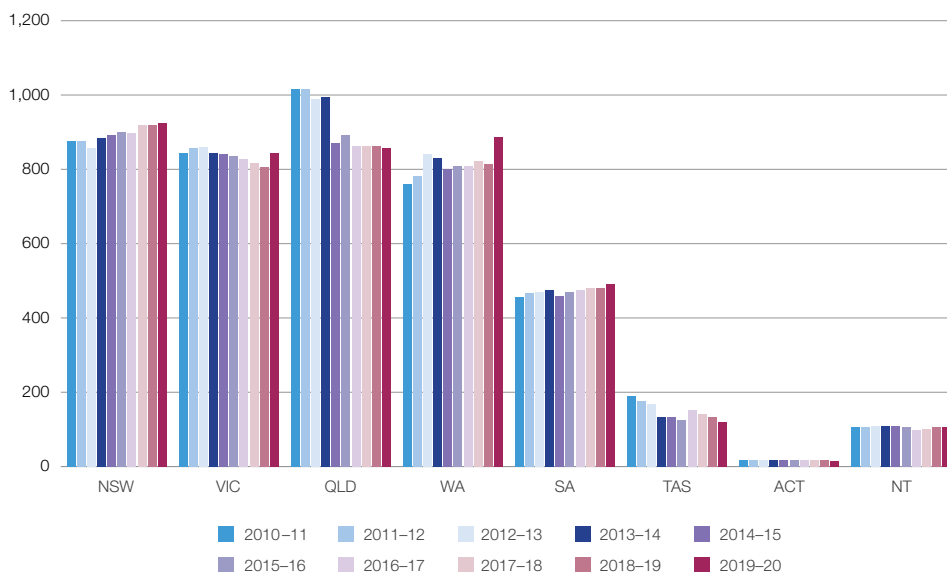
Most jurisdictions have conducted industry training programs to assist reporters to use the Online Reporting System. These training programs vary from one-on-one sessions with new reporters to more formal group sessions. There is a need for continued training due to turnover in industry, new small business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

Industry facility reporting

The Commonwealth published the 2019–20 National Pollutant Inventory (NPI) on 31 March 2021. The number of facilities reporting to the NPI increased slightly from 4,157 in 2018–19 to 4,261 in 2019–20.

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 2010–11



PART 4—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 6:

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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 <i>Protection of the Environment Operations (Waste) Regulation 2014</i> (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

Table 2 summarises the implementation issues that arose throughout the 2020–21 reporting year. For detailed implementation activities refer to jurisdictional reports as listed in Part 5.

According to data from the Australian Packaging Covenant Organisation (APCO), the number of signatories to the Australian Packaging Covenant (Covenant) increased in 2020–21 (1,451) compared to the previous reporting year (1,422).

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

Table 2: Summary of implementation issues arising

Jurisdiction	Summary of implementation issues arising
Commonwealth	No issues reported.
New South Wales	No issues reported.
Victoria	No issues reported.
Queensland	No issues reported.
Western Australia	No Issues reported.
South Australia	No issues reported.
Tasmania	No issues reported.
Australian Capital Territory	In September 2020, the <i>Waste Management and Resource Recovery (Environment Protection – Used Packaging Materials) Code of Practice 2020</i> (the Code of Practice) came into force.
Northern Territory	No issues reported.

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 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 3: Covenant signatories at 30 June 2021 as reported by states and territories.

ACT	9
NT	1
NSW	635
QLD	142
SA	82
TAS	17
VIC	568
WA	101
TOTAL	1555

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 APCO is working to refine the process.

According to information provided by APCO, there were 1,451 covenant signatories, of which 1,429 (98.48%) were compliant. This figure differs from the total provided in Table 3. 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.

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

PART 5—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 7.

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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 2021.

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 the Air Toxics NEPM fulfils a useful role but would benefit from further work. The proposed National Clean Air Agreement (NCAA) 2021–2023 work plan includes 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 review of the *National Environment Protection Council Act 1994* and the outcome of the Conran Review of COAG councils and Ministerial forums.

Other relevant projects in the proposed NCAA work plan include reviewing aromatics levels in petrol and sharing information to reduce pollution from wood heaters. Petrol contains numerous aromatics that are known or suspected to be cancer causing. For example, benzene, xylene, toluene and polycyclic aromatic hydrocarbons, all of which are key substances in the Air Toxics NEPM. Reducing levels of aromatics in Australian petrol will improve health outcomes, reducing levels of air toxics from vehicle exhaust. Similarly, work to promote the uptake of less polluting wood heaters and the responsible use of wood heaters reduces the release of toxic volatile organic compounds from domestic wood heaters.

New South Wales

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for New South Wales by the Hon Matt Kean MP, Minister for Energy and Environment, for the reporting year ended 30 June 2021.

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 Turella site collected data on formaldehyde and acetaldehyde; 19 polycyclic aromatic hydrocarbons including benzo(a)pyrene; and 41 volatile organic compounds including benzene, toluene and xylenes.

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

NEPM-compliant sampling and analysis methods were used.

Tables 1 to 5 of the NSW implementation report for the reporting year ended 30 June 2010, reproduced below, summarise the monitoring results for the five air toxics – benzene, benzo(a)pyrene as a marker for polycyclic aromatic hydrocarbons, formaldehyde, toluene and xylenes.

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

The 2013 Air Emissions Inventory for the Greater Metropolitan Region of NSW (www.epa.nsw.gov.au/your-environment/air/air-emissions-inventory) shows that emissions of all five NEPM Air Toxics in the Sydney region reduced relative to 2008 by:

- 13% for benzene
- 3% for toluene
- 6% for xylene
- 23% for formaldehyde, and
- 10% for total polycyclic aromatic hydrocarbons.

Since 2013 air toxic emissions from motor vehicles, a major source of all five compounds, are estimated to have continued to decrease. These emission estimates indicate that ambient air toxic levels would be expected to have decreased since the 2008–09 monitoring.

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 2021.

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 2020 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 2020, 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 Toxic

During 2020, 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 Meaghan Scanlon MP, Minister for the Environment and the Great Barrier Reef and Minister for Science and Youth Affairs, for the reporting year ended 30 June 2021.

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 2019*, and the *Environmental Protection (Air) Policy 2019*, with the NEPM monitoring investigation levels incorporated as air quality objectives.

In the 2020 calendar year reporting period, 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. It was necessary to temporarily remove the DOAS instrument from the Springwood site on 8 May 2020 due to the commencement of extensive onsite building renovation works.

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. However, no specific studies into localised air quality were implemented in the 2020–21 reporting period.

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 2020, 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 2020 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 2: Monitoring Results for Benzene

	Springwood	Central Gladstone
Air Toxic	Benzene	Benzene
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/20 to 8/5/20	1/1/20 to 31/12/20
Number of valid results	123	266
Maximum 24-hour average concentration	0.0015 ppm	0.0026 ppm
Annual average concentration (as arithmetic mean)	0.0010 ppm	0.0015 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0002 ppm	0.0004 ppm
Number of times monitoring investigation level exceeded	0	0

Table 3: Monitoring Results for Toluene

	Springwood	Central Gladstone
Air Toxic	Toluene	Toluene
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/20 to 8/5/20	1/1/20 to 31/12/20
Number of valid results	122	326
Maximum 24-hour average concentration	0.0053 ppm	0.0060 ppm
Annual average concentration (as arithmetic mean)	0.0020 ppm	0.0021 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0013 ppm	0.0008 ppm
Number of times monitoring investigation level exceeded	0	0

Table 4: Monitoring Results for Xylenes

	Springwood	Central Gladstone
Air Toxic	Xylenes	Xylenes
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/20 to 8/5/20	1/1/20 to 31/12/20
Number of valid results	128	327
Maximum 24-hour average concentration	0.0213 ppm	0.0147 ppm
Annual average concentration (as arithmetic mean)	0.0095 ppm	0.0069 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0038 ppm	0.0015 ppm
Number of times monitoring investigation level exceeded	0	0

Table 5: Monitoring Results for Formaldehyde

	Springwood	Central Gladstone
Air Toxic	Formaldehyde	Formaldehyde
Monitoring method	DOAS	DOAS
Period of monitoring	1/1/20 to 8/5/20	1/1/20 to 31/12/20
Number of valid results	124	326
Maximum 24-hour average concentration	0.0060 ppm	0.0065 ppm
Annual average concentration (as arithmetic mean)	0.0033 ppm	0.0046 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0009 ppm	0.0006 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 2020 calendar year reporting period, together with past results, there is no evidence that the AT NEPM monitoring investigation levels would be exceeded in ambient air in Queensland. No specific management actions to reduce air toxics concentrations have been implemented.

Repeat Identification of Stage 1 and Stage 2 Sites

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

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for Western Australia by the Hon Amber-Jade Sanderson MLA, Minister for Environment; Climate Action; Commerce, for the reporting year ended 30 June 2021.

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 Perth metropolitan region. The initiatives within the AQMP are complementary to the Air Toxics 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 summarised and 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 2021.

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, for the reporting year ended 30 June 2021.

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 2021.

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 2018–2019 period. Consequently, the monitoring requirements for the Air Toxics NEPM must be evaluated as “not demonstrated” for the 2020 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, 14 stage 2 sites were identified in a Desktop Analysis conducted in accord with the Air Toxics NEPM Desktop Analysis protocol.

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

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Air Toxics) Measure for the Australian Capital Territory by Ms Rebecca Vassarotti MLA, Minister for the Environment, for the reporting year ended 30 June 2021.

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 MLA, Minister for Environment for the reporting year ended 30 June 2021.

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*.

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 2020–21, no sites were evaluated or selected and no analyses were performed for NEPM reporting.

NT is one of the lead agencies for a project to “Improve understanding of air toxics and options for their management” which is part of the National Clean Air Agreement 2021–23 workplan.

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 2021.

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 work to review and strengthen the Ambient Air Quality (AAQ) standards for ozone, nitrogen dioxide and sulfur dioxide was completed in 2020. This resulted in new and more stringent standards that were endorsed by Environment Ministers at their meeting in April 2021. The Ministers also agreed that the new standards for these three pollutants should be reviewed in 2025, noting that reviews of the PM_{2.5} and annual PM₁₀ particle standards are also planned for this time.

The Royal Commission into National Natural Disaster Arrangements final report (30 October 2020) recommended nationally consistent air quality information and health advice be developed, as well as the development of a national smoke forecasting capability. In November, the Commonwealth, state and territory governments endorsed a new framework that provides nationally consistent air quality advice, actions and health warnings across jurisdictions.

States and territories will implement new reporting categories and health messaging in their jurisdictions. Some jurisdictions require significant work to change their reporting and will require more time to implement the changes.

While this work will not impact upon the reporting categories for the AAQ NEPM, it departs from the averaging conventions (24-hour averages) of the AAQ NEPM.

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 346 retail fuel sites during 2020–21 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.

In October 2020, the Department of Infrastructure, Transport Regional Development and Communications released two draft Regulation Impact Statements (RIS) for public consultation. They are evaluating the costs and benefits of mandating changes to the Australian Design Rules to implement Euro 6 (for light duty road vehicles) and Euro VI (for heavy duty road vehicles) noxious emission standards from 2027. The benefit cost analysis found that avoided health costs would amount to \$326.6 million for Euro 6 and \$275.2 million for Euro VI standards within 10 years of implementing each.

Public Comment on these two draft RISs closed in February 2021. The department is currently reviewing the feedback received from the submissions before setting its proposed approach for a policy decision. The department is planning to seek a policy decision for heavy vehicles by the end of 2021 and a policy decision for light vehicles in conjunction with the review of fuel quality standards.

The introduction of Euro 6/VI emissions standards is made possible by improvements to fuel quality standards announced in 2019.

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 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 and the new standards reflect the increasing evidence that air pollution plays in determining national mortality and morbidity outcomes.

Following delivery of the Royal Commission into National Natural Disaster Arrangements final report changes were accepted by all jurisdictions on nationally consistent air quality information and health advice. Additionally, an agreement was made to develop national smoke forecasting capabilities which reflects the importance placed by all governments on the changing nature of climate in relation to air pollution, and community health and resilience.

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 2021.

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* (POEO Act), the *Protection of the Environment Operations (Clean Air) Regulation 2010* and the *Protection of the Environment Operations (General) Regulation 2009*.

The POEO 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.

NSW experienced significantly improved air quality in 2020 (calendar year) compared to 2019. Air quality in NSW in early 2020, particularly during January and February, was greatly affected by the unprecedented extensive bushfires and dust storms which continued from 2019. This resulted in poorer air quality across the state. Later, from March 2020 onwards, air quality trends were defined by the impact of the COVID-19 lockdown, resulting in reduced vehicle traffic and an associated reduction of some air pollutants. See: www.environment.nsw.gov.au/topics/air/nsw-air-quality-statements/annual-air-quality-statement-2020/focus-areas.

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 (GMR) 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 (GMR) 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 2021, DPIE operated 94 monitoring stations in the NSW air quality monitoring network, which comprised several networks. Air quality data and information are made publicly available on the DPIE website, updated hourly. Automated text messages and emails are sent to subscribers when air quality is measured to exceed national air quality standards for gases, or national reporting levels for particles. 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 2020–21.

Air emissions inventory

The Air Emissions Inventory for the NSW 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 for specific reference 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 (www.epa.nsw.gov.au/your-environment/air/air-emissions-inventory/air-emissions-inventory-2013).

The community can access inventory information about local sources of air pollution via the Air Emissions in my Community web tool (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.

Air quality monitoring

At 30 June 2021, the NSW air quality monitoring network totalled 94 stations, consisting of 55 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.

In 2020, a background air quality monitoring station was commissioned at the existing Merriwa site in the Upper Hunter region. This site now measures concentrations of criteria gaseous pollutants and PM_{2.5}, supplementing ongoing PM₁₀ and meteorological measurements (since 2012) as part of the industry-funded Upper Hunter Air Quality Monitoring Network.

In 2020, new monitoring stations commenced operation in Penrith in north-west Sydney, Morisset in Lake Macquarie, and Lidcombe station in Sydney. The upgrade of all 39 rural network sites to include instruments which provide indicative information on both PM_{2.5} and PM₁₀, along with total suspended particles (TSP), was completed during the 2020–21 financial year.

Monitoring of black carbon has been extended from six to ten locations across the NSW network in 2020. This includes locations in Sydney, Wollongong, Newcastle, Central Coast, Wagga Wagga, Armidale, and Merriwa. Black carbon is a component of PM_{2.5} and is formed from combustion, particularly of fossil fuels. It is associated with short-term and long-term health impacts and is a contributor to climate change. These measurements will help inform health impact population assessments of air pollution in NSW.

As reported for the 2019–20 financial year, emergency monitoring was deployed as a key response to the bushfire emergency period during summer 2019–20. At the end of the bushfire period, the emergency monitors continued to collect background air quality data. In April 2020, some of these temporary stations were decommissioned. The majority (six out of nine) were retained as part of the state's network of long-term monitoring stations, to help expand the state's network to provide air quality data where previously there has been no air quality monitoring in these regions. See: <http://www.environment.nsw.gov.au/topics/air/monitoring-air-quality/special-projects-monitoring/historical-monitoring>.

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. The revised plan was released in December 2020 and is available on the DPIE website: www.environment.nsw.gov.au/topics/air/monitoring-air-quality/review/nsw-air-quality-monitoring-plan.

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. Monitoring began in June 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), 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 by season (Winter, Spring, Summer and Autumn), have been published on the EPA website. They show that air quality within the Blue Mountains and Lithgow area is generally good outside of natural events such as bushfire and dust storms. The final project interpretation report, analysing the full 12 months of data, was published on the EPA website in November 2020.

Air emissions and health impacts research

Broken Hill Environmental Lead Study

Sampling for the Broken Hill Environmental Lead Study concluded 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. Currently, a one-day-in-six sampling schedule continues at four locations, to monitor against NEPM health goals.

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 first study report covering results from the first phase of the study (2017–2019) was released in November 2020, see: www.environment.nsw.gov.au/topics/air/research/current-research/sydney-air-quality-study.

The next phase of the study will present new findings on the health costs of air pollution. The health burden analysis based on results published in the first report will be finalised in collaboration with NSW Health and the EPA.

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 is working towards more accurately forecasting air quality for greater Sydney and its sub-regions and is progressively expanding forecasting to the whole of the NSW GMR.

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 2019–20 bushfire season improvements were made in smoke emissions modelling to better characterise smoke impacts from the unprecedented scale of wildfires on regional air quality. Continuous improvements are being made to this system in order to expand forecasting capabilities to include regions beyond the Sydney GMR. DPIE has been undertaking a forecast trial for Sydney subregions, Lower Hunter, Central Coast and Illawarra, with a plan to operationalise the services in late 2021, see: www.environment.nsw.gov.au/topics/air/nsw-air-quality-statements/air-quality-special-statement-spring-summer-2019-20/focus-areas.

Industry emissions

In 2020–21, the EPA continued to implement its regulatory responsibilities, including licensing scheduled industry activities and conducting compliance and enforcement programs. The POEO 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 2020–21, 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 2018 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. Since then, the EPA has 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. The EPA issued variations to the licences of all five NSW coal fired power stations in July 2020. The changes strengthen monitoring and reporting requirements and tighten air emission limits.

Non-road diesel and marine emissions

Government Resource Efficiency Policy

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 and available on request of the New South Wales Department of Environment and Heritage.

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 all new buildings and infrastructure and upgrades to existing buildings and infrastructure 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 accompanied with their equipment's air emissions data. 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 POEO 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.

The new rolling stock operator licences were issued on 5 August 2020. The requirements in the licence are for new locomotives to meet US Tier 2 particulate matter emissions. There are no air emission limits for locomotives already operating on the rail network. The licences, however, include operating conditions and pollution studies that seek to minimise impacts on air quality through idling. Further, the EPA will work with the rail industry to progressively reduce locomotive air emissions.

Vehicle and fuel emissions

Regulation of motorway tunnel ventilation stacks

In July 2019 the POEO 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 made 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 Environment Line website or mobile phone application. In 2020–21 financial year the EPA issued 810 advisory letters based on public reports, of which 628 advisory letters were to diesel vehicle owners. An average of 168 smoky vehicle reports are received each month from the public (more than 2,000 public reports over the year), indicating a high level of awareness in the community of the unacceptability of excessive visible emissions.

In addition, six defective vehicle notices were issued in 2020–21 of which five 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 5,750 tonnes per year.

Summer low-volatility petrol

To manage ozone formation in the Sydney region, regulatory requirements limit petrol volatility to 62 kilopascals (a measure of vapour pressure) over the summer period from 15 November to 15 March each year. Petrol importers and blenders must test and report to the EPA on batch volatility. The petrol volatility limits reduce VOC emissions in the Sydney region by an estimated 4,000 tonnes each summer.

National vehicle and fuel standards

The Commonwealth Government is responsible for fuel quality and vehicle emission standards for new on-road vehicles. These standards are being reviewed. The NSW Government's 2021 submission on the Commonwealth's draft Regulation Impact Statements on *Vehicle Emission Standards for Cleaner Air* called for the earliest adoption of Euro 6/VI standards for all light/heavy diesel vehicles to maximise health benefits. 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.

NSW has consistently supported tighter national vehicle and fuel standards. In 2020 NSW was represented on the national Fuel Standards Consultative Committee by DPIE.

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.

In 2017 the EPA developed a range of educational materials for councils to raise public awareness about wood smoke impacts and the correct operation of wood heaters. The materials are now available in English and five community languages – Arabic, Cantonese, Hindi, Mandarin and Vietnamese. The local community education campaign materials are available at www.epa.nsw.gov.au/your-environment/air/reducing-wood-smoke-emissions/council-resource-kit.

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 AS/NZS 4012 and AS/NZS 4013.

Hunter region coal mines dust management

Throughout spring and summer of the 2020–21 financial year, the EPA implemented the annual *Bust the Dust* campaign 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, on extremely hot, dry and windy days, dust was observed blowing off exposed areas of mine sites. The 2020–21 *Bust the Dust* program saw EPA officers undertake inspections and make observations of mine activities on eight separate occasions. Wetter weather conditions due to the predicted La Nina climatic conditions have helped manage dust emissions during the 2020–21 spring and summer.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Data in this section are presented for the 2020 calendar year. Data are reported against the standards in effect in 2020.

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 2020, the NSW NEPM reporting network comprised 36 air quality monitoring stations, compared with 32 in 2019. Four stations that were commissioned pre-2020, were incorporated into the AAQ NEPM network during 2020, including one Sydney and three Upper Hunter stations. The 36 stations comprised 17 in Sydney, one in the Central Coast, three in the Illawarra, three in the Lower Hunter, three in the Upper Hunter and nine in regional NSW.

Of the 36 monitoring stations, 29 stations met the requirement for at least 75 per cent data availability for all criteria pollutants measured. Seven stations recorded less than 75 per cent data availability for at least one pollutant over any three-month period.

The drought and bushfires which impacted Australia during January and February 2020 had significant impacts on air quality in NSW. Six ozone exceedance days were observed during this period, and there was a high number of daily exceedances (both exceptional and non-exceptional) for particles as PM_{10} and $PM_{2.5}$ (55 and 59 days respectively) as a result of the bushfires and dust storms during early 2020.

During 2020, 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 the highest daily average for the year was 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.

As mentioned, concentrations of ozone and particulate matter (as PM_{10} and $PM_{2.5}$) were observed to be above national standards during 2020. Details of these observations and the compliance assessment with respect to the national standards follow. NSW programs targeting the primary emission sources of ozone and particle pollution are outlined in the previous section.

Ozone

In 2020, 26 stations in the NEPM network monitored ozone, compared with 25 in 2019. Of these, 25 stations met 75 per cent data availability; and one did not have the required data coverage to determine compliance.

There were six exceedance days of either or both ozone standards during 2020. In comparison, there were 33 days in 2019.

During 2020, of the 26 sites at which ozone was monitored, the majority met the national standards and goals for both, one-hour ozone (25 stations) and four-hour ozone (21 stations). Four sites recorded between two and four exceedance days of either or both ozone standards. These exceedances occurred between January and February, associated with typical ozone conducive weather conditions observed in the GMR and pollutant emissions from bushfires.

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 including 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 uses and urban expansion, as well as impacts from incidental emissions such as bushfire smoke.

The NEPM, as effective for the 2020 reporting year, does not differentiate the impact of bushfire smoke on ozone 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 three calendar days in 2020, including a two-day episode observed across western Sydney during 31 January to 1 February, in the Black Summer bushfire period.

Twelve of 26 stations exceeded the one-hour standard, with all exceeding stations recording only one day above the standard.

- *Ozone one-hour goal*

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

Twenty-five of 26 stations complied with the NEPM one-hour ozone goal: 14 stations had no exceedance days, and 11 stations recorded one allowable exceedance day.

- *Ozone four-hour standard*

The NEPM four-hour standard was exceeded on six calendar days in 2020. These were observed during January and February 2020 in western Sydney, Illawarra and Southern Tablelands, due to the impact of smoke from bushfires.

Nineteen of 26 stations exceeded the four-hour standard, with up to four days above the standard recorded at any one station.

- *Ozone four-hour goal*

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

Of the 26 stations measuring ozone, 21 stations complied with the NEPM four-hour ozone goal: seven stations had no exceedance days, and 14 stations recorded one allowable day. Four stations did not comply with the four-hour ozone goal, having recorded at least two days above the standard.

Particles

At all measurement locations across the state, PM_{10} and $PM_{2.5}$ levels increased significantly in the early months of 2020 (January to February). The major influence on elevated particle pollution was from the bushfires during the 2019–20 summer season, 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 early part of 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 site-specific local dust.

Detailed compliance information is provided below.

Particles as PM_{10}

Thirty-six stations in the NSW NEPM air quality monitoring network monitored PM_{10} levels in 2020, compared with 32 in 2019. Thirty-five stations met 75 per cent data availability, and one did not have the required data coverage during 2020.

- *PM_{10} 24-hour standard*

The PM_{10} 24-hour standard was exceeded on 55 calendar days in 2020. This compares with 129 days in 2019.

Of the 55 calendar days, events on 39 days were attributable to exceptional causes only, while events on 15 days were attributable to non-exceptional causes only. One day was identified where both, exceptional and non-exceptional causes impacted different sites on the same day.

The major causes for exceptional event days were widespread, continental-scale dust storms, which occurred mostly during January to February 2020. All 36 monitoring stations were impacted by such exceptional particle event days. Combined with smoke from the 2019–20 bushfires, these causes contributed to exceedances on at least 37 days. As observed during late 2019–2020 summer, there were multiple days where both bushfire smoke and widespread dust storms contributed to particle exceedances at the same location.

The major cause for non-exceptional event days was particles from local and regional scale dust sources, that is, events not attributable to continental-scale dust activity. These non-exceptional events were observed across nine stations: Liverpool (Sydney South-west), Rouse Hill (Sydney North-west), Kembla Grange (Illawarra), Wyong (Central Coast), Singleton and Muswellbrook (Upper Hunter), Armidale (Northern Tablelands), and Wagga Wagga North and Albury (South-west Slopes).

Like the previous year, the impact of drought on dust in regional NSW locations was noted. In addition, site-specific works in the vicinity of monitoring stations also was a major contributor to some non-exceptional event days. Seven local dust event days were recorded in the Illawarra region, at Kembla Grange station. South-west Slopes region was also notably impacted by five non-exceptional event days, due to dust at Wagga Wagga North station, determined to be either locally or regionally sourced.

- *PM₁₀ 24-hour goal*

Twenty-six of 36 stations met the 24-hour PM₁₀ goal of zero exceedances after excluding exceptional events. Nine stations did not meet the 24-hour PM₁₀ goal, due to non-exceptional exceedance days related to local dust. One station did not have the required data coverage during 2020.

- *PM₁₀ annual standard*

Thirty-five of 36 stations recorded annual averages below the annual standard of 25.0 µg/m³. Wagga Wagga North in the South-west Slopes recorded the highest annual average of 23.2 µg/m³. There is no applicable goal for the annual standard which is reported as all measured data including exceptional events.

Particles as PM_{2.5}

Thirty-five stations in the NSW NEPM air quality monitoring network monitored PM_{2.5} levels in 2020, compared with 32 in 2019. Thirty stations in 2020 met 75 per cent data availability. Four stations did not have the required data coverage during 2020 to determine compliance.

- *PM_{2.5} 24-hour standard*

The PM_{2.5} 24-hour standard was exceeded on 59 calendar days during 2020. This compares with 116 days in 2019.

Of the 59 calendar days, events on 32 days were attributable to exceptional causes only, while 24 days were attributable to non-exceptional causes only. Three days were identified where both, exceptional and non-exceptional causes impacted different sites on the same day.

The 2019–20 Black Summer bushfires contributed to 28 exceedance days between January and February 2020. During this period, there were several days when all 35 stations were impacted by smoke from the bushfires, and on other days by a mix of dust and burning. Later, between May to October 2020, hazard reduction burns contributed to exceedances of the 24-hour standard in the Sydney and Central Tablelands regions.

The major cause for non-exceptional particle events was smoke generated by domestic wood heating, observed across ten stations: Liverpool (Sydney South-west), Rouse Hill, Richmond and Prospect (Sydney North-west stations), Newcastle (Lower Hunter), Singleton and Muswellbrook (Upper Hunter), Armidale (Northern Tablelands), Orange (Central Tablelands), and Gunnedah (North-west Slopes).

- *PM_{2.5} 24-hour goal*

Twenty-one of 35 stations met the NEPM 24-hour PM_{2.5} goal of zero exceedances upon excluding exceptional events. Four stations did not have the required data coverage to determine compliance, and 10 stations did not meet the goal due to non-exceptional causes.

The 10 stations impacted by non-exceptional exceedance days were affected by wood smoke generated from domestic wood heating. Twenty event days were observed exclusively at Armidale station in the Northern Tablelands, three days exclusively at Orange in Central Tablelands, and one day exclusively at Muswellbrook in the Upper Hunter region.

- *PM_{2.5} annual standard*

Seventeen of 35 stations recorded an annual average concentration below the standard 8 µg/m³ and met the annual standard. Five stations did not have the required data coverage to determine compliance. Thirteen stations did not meet the standard, recording annual averages ranging from 8.2–11.8 µg/m³, with Goulburn 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 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.

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 sub-yearly averages for NEPM standards for gases are exceeded on only one day per calendar year, or the NEPM 24-hour standards for particles as PM_{10} 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.

The NSW Air Quality Monitoring Plan and Regional Monitoring Plans can be accessed 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 = 9.0ppm)

Station	Number of exceedances	NEPM goal compliance
Sydney		
Camden	0	Met
Campbelltown West	0	Met
Chullora	0	Met
Cook and Phillip	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		
Wyong	0	Met
Illawarra		
Wollongong	0	Met
Lower Hunter		
Newcastle	0	Met

* Annual data availability was above the 75% requirement but station did not meet the 75% requirement in at least one quarter. Performance against the 8-hour standard in this case is not determined (ND).

NO₂ Nitrogen Dioxide

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

Station	1-hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Sydney				
Bargo	0	Met	0.005	Met
Bringelly	0	ND	0.003	ND
Camden	0	Met	0.004	Met
Campbelltown West	0	Met	0.009	Met
Chullora	0	Met	0.009	Met
Cook and Phillip	0	Met	0.013	Met
Earlwood	0	Met	0.009	Met
Liverpool	0	Met	0.011	Met
Macquarie Park	0	Met	0.004	Met
Oakdale	0	Met	0.011	Met
Parramatta North	0	Met	0.007	Met
Prospect	0	Met	0.007	Met
Randwick	0	Met	0.005	Met
Richmond	0	Met	0.003	Met
Rouse Hill	0	Met	0.005	Met
Rozelle	0	Met	0.008	Met
St Marys	0	Met	0.004	Met
Central Coast				
Wyang	0	Met	0.003	Met
Illawarra				
Albion Park South	0	Met	0.003	Met
Kembla Grange	0	Met	0.004	Met
Wollongong	0	Met	0.006	Met
Lower Hunter				
Beresfield	0	Met	0.007	Met
Newcastle	0	Met	0.005	Met
Wallsend	0	Met	0.006	Met

Station	1-hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Upper Hunter				
Muswellbrook*	0	ND	0.008	ND
Singleton	0	Met	0.006	Met
Regional NSW				
Goulburn	0	Met	0.003	Met
Gunnedah	0	Met	0.003	Met

* Annual data availability was above the 75% requirement, but station did not meet the 75% requirement in at least one quarter. Performance against the 1-hour and annual standards is not determined (ND) in this case, and any annual average reported should be taken as indicative only.

O₃

Ozone

(NEPM standards: 1-hour = 0.10ppm, 4-hour = 0.08ppm)

Station	1-hour		4-hour	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Sydney				
Bargo	1	Met	1	Met
Bringelly*	1	ND	1	ND
Camden	1	Met	2	Not Met
Campbelltown West	1	Met	2	Not Met
Chullora	1	Met	1	Met
Cook and Phillip	0	Met	0	Met
Earlwood	0	Met	1	Met
Liverpool	1	Met	1	Met
Macquarie Park	1	Met	1	Met
Oakdale	1	Met	1	Met
Parramatta North	0	Met	1	Met
Prospect	1	Met	1	Met
Randwick	0	Met	1	Met
Richmond	0	Met	1	Met
Rouse Hill	0	Met	1	Met

Station	1-hour		4-hour	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Rozelle	0	Met	0	Met
St Marys	1	Met	3	Not Met
Central Coast				
Wyong	1	Met	1	Met
Illawarra				
Albion Park South	1	Met	1	Met
Kembla Grange	0	Met	1	Met
Wollongong	0	Met	0	Met
Lower Hunter				
Beresfield	0	Met	0	Met
Newcastle	0	Met	0	Met
Wallsend	0	Met	0	Met
Regional NSW				
Goulburn	0	Met	4	Not Met
Gunnedah	0	Met	0	Met

* Annual data availability was above the 75% requirement, but station did not meet the 75% requirement in at least one quarter. Performance against the NEPM standards is therefore not determined (ND) in this case.

SO₂

Sulfur dioxide

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

Station	1 hour		1 day		1 year	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Sydney						
Bargo	0	Met	0	Met	0.000	Met
Bringelly*	0	ND	0	ND	0.000	ND
Campbelltown West	0	Met	0	Met	0.000	Met
Chullora	0	Met	0	Met	0.000	Met
Cook and Phillip	0	Met	0	Met	0.000	Met
Liverpool	0	Met	0	Met	0.001	Met
Macquarie Park	0	Met	0	Met	0.000	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	Met	0	Met	0.000	Met
Rozelle	0	Met	0	Met	0.000	Met
Central Coast						
Wyong	0	Met	0	Met	0.001	Met
Illawarra						
Albion Park South	0	Met	0	Met	0.000	Met
Wollongong	0	Met	0	Met	0.001	Met
Lower Hunter						
Beresfield	0	Met	0	Met	0.001	Met
Newcastle	0	Met	0	Met	0.001	Met
Wallsend	0	Met	0	Met	0.002	Met
Upper Hunter						
Muswellbrook*	0	ND	0	ND	0.002	ND
Singleton	0	Met	0	Met	0.002	Met

* Annual data availability was above the 75% requirement, but station but did not meet the 75% requirement in at least one quarter. Performance against the 1-hour, 1-day and annual standards is not determined (ND) in this case, and any annual average reported should be taken as indicative only.

PM₁₀Particles as PM₁₀(NEPM standards: 1 day = 50µg/m³, 1 year = 25µg/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	6	Met	16.0	Met
Bringelly	0	11	Met	18.3	Met
Camden	0	9	Met	16.6	Met
Campbelltown West	0	10	Met	17.0	Met
Chullora	0	7	Met	20.5	Met
Cook and Phillip*	0	4	ND	15.7	ND
Earlwood	0	9	Met	18.5	Met
Liverpool	2	7	Not Met	20.8	Met
Macquarie Park	0	7	Met	15.7	Met
Oakdale	0	10	Met	14.4	Met
Parramatta North	0	9	Met	19.3	Met
Prospect	0	10	Met	20.2	Met
Randwick	0	9	Met	19.5	Met
Richmond	0	9	Met	17.0	Met
Rouse Hill	1	10	Not Met	18.3	Met
Rozelle	0	7	Met	18.1	Met
St Marys	0	11	Met	18.9	Met
Central Coast					
Wyong	1	5	Not Met	15.9	Met
Illawarra					
Albion Park South	0	10	Met	17.1	Met
Kembla Grange	7	19	Not Met	21.5	Met
Wollongong	0	11	Met	18.8	Met

Station	1 day			1 year	
	Non-exceptional exceedance days	Total exceedance days	NEPM goal compliance	Annual average (µg/m³)	NEPM goal compliance
Lower Hunter					
Beresfield	0	6	Met	185	Met
Newcastle	0	9	Met	22.4	Met
Wallsend	0	6	Met	17.7	Met
Upper Hunter					
Aberdeen	0	8	Met	17.8	Met
Muswellbrook	1	15	Not Met	22.5	Met
Singleton	1	10	Not Met	20.5	Met
North-west Slopes					
Gunnedah	0	3	Met	13.9	Met
Narrabri	0	8	Met	12.4	Met
Tamworth	0	8	Met	16.8	Met
Northern Tablelands					
Armidale	1	4	Not Met	13.7	Met
Central Tablelands					
Bathurst	0	14	Met	17.0	Met
Orange	0	12	Met	17.9	Met
South-west Slopes					
Albury	1	19	Not Met	20.1	Met
Wagga Wagga North	5	25	Not Met	23.2	Met
Southern Tablelands					
Goulburn	0	18	Met	19.2	Met

* Annual data availability was above the 75% requirement, but station did not meet the 75% requirement in at least one quarter. Performance against the 1-day and annual standards is therefore not determined (ND) in this case, and any annual average reported should be taken as indicative only.

PM_{2.5}

Particles as PM_{2.5}

(NEPM standards: 1 day = 25µg/m³, 1 year = 8µg/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	14	Met	7.8	Met
Bringelly	0	12	Met	8.5	Not Met
Camden	0	11	Met	7.7	Met
Campbelltown West	0	12	Met	7.5	Met
Chullora	0	9	Met	8.8	Not Met
Cook and Phillip*	0	7	ND	7.8	ND
Earlwood	0	9	Met	8.0	Met
Liverpool	1	7	Not Met	9.1	Not Met
Macquarie Park	0	8	Met	7.1	Met
Oakdale	0	11	Met	6.7	Met
Parramatta North	0	10	Met	8.2	Not Met
Prospect	2	13	Not Met	8.6	Not Met
Randwick*	0	8	ND	7.6	ND
Richmond	1	9	Not Met	8.4	Not Met
Rouse Hill	1	10	Not Met	7.1	Met
Rozelle	0	8	Met	7.5	Met
St Marys*	0	9	ND	7.6	ND
Central Coast					
Wyang	0	3	Met	5.6	Met
Illawarra					
Albion Park South	0	10	Met	6.8	Met
Kembla Grange	0	11	Met	7.0	Met
Wollongong*	0	10	ND*	7.8*	ND*

Station	1 day			1 year	
	Non-exceptional exceedance days	Total exceedance days	NEPM goal compliance	Annual average ($\mu\text{g}/\text{m}^3$)	NEPM goal compliance
Lower Hunter					
Beresfield	0	8	Met	7.7	Met
Newcastle*	1	5	Not Met	**	ND*
Wallsend	0	5	Met	7.3	Met
Upper Hunter					
Muswellbrook	2	9	Not Met	9.3	Not Met
Singleton	1	6	Not Met	8.4	Not Met
North-west Slopes					
Gunnedah	1	6	Not Met	7.7	Met
Narrabri	0	1	Met	5.5	Met
Tamworth	0	4	Met	6.8	Met
Northern Tablelands					
Armidale	23	27	Not Met	9.2	Not Met
Central Tablelands					
Bathurst	0	13	Met	7.6	Met
Orange	3	15	Not Met	9.1	Not Met
South-west Slopes					
Albury	0	16	Met	11.1	Not Met
Wagga Wagga North	0	13	Met	10.7	Not Met
Southern Tablelands					
Goulburn	0	16	Met	11.8	Not Met

* Annual data availability was above the 75% requirement, but station did not meet the 75% requirement in at least one quarter. Performance against the 1-day and annual standards is therefore not determined (ND) in this case, and any annual average reported should be taken as indicative only.

** The $\text{PM}_{2.5}$ annual mean at Newcastle is not reported due to <75% data availability for the entire year, caused by ongoing instrument faults spanning two quarters, during 11 March and 4 June 2020.

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 2021.

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 (PM_{2.5}) data capture was below the target of 75% at Alphington and Geelong South in quarter 1 (Q1) due to instrumentation faults. Data capture was above 75% at all other stations.
- For particulate matter equal or less than 10 µm (PM₁₀) data capture was below the target of 75% at Footscray in quarter 1 (Q1) and Geelong South in quarter 2 (Q2) due to instrumentation faults. 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 (NO₂), data capture above the target of 75% at all stations.
- For ozone (O₃) data capture was below the target of 75% at Point Cook quarter 1 (Q1) and quarter 2 (Q2) as a result of power supply issues at the site. Data capture was above 75% at all other stations.
- For sulfur dioxide (SO₂) data capture was below the target of 75% at Altona North in quarter 1 (Q1), quarter 2 (Q2) and quarter 3 (Q3) as the station was being relocated. Data capture was below the target of 75% at Geelong South in quarter 1 (Q1) and quarter 2 (Q2) due to an instrument fault. 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 2020 was categorised as good due to levels of air pollution being below the air quality standards on most days. However, there were days when the air quality standards for PM_{2.5}, PM₁₀ and O₃ were exceeded. This was mainly due to major bushfires in January and February which resulted in significant smoke impacts and urban pollution across wide areas of the state.
- Urban sources, such as domestic wood heating, continue to be a significant contributor to the number of exceedances of the 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 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 several days of the PM₁₀ standard to be exceeded during summer.
- Compliance with the O₃ goals were not demonstrated at Dandenong, Footscray, Geelong and Melton where there were more than one day where ozone standard was exceeded. These days exceeding the standard were likely due to bushfires.

The results from issue-specific monitoring stations in Brooklyn and the Latrobe Valley are displayed on EPA's website: <https://www.epa.vic.gov.au/EPAAirWatch>

Data from relevant monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goal were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM.

The data are presented in greater detail [Air monitoring report 2020 | Environment Protection Authority Victoria](https://www.epa.vic.gov.au/Air-monitoring-report-2020) ([epa.vic.gov.au](https://www.epa.vic.gov.au))

CO

Carbon monoxide

(NEPM standard rolling 8 hour = 9.0ppm)

Station	Number of exceedances	NEPM goal compliance
Alphington	0	Met
Footscray	0	Met
Geelong South	0	Met
Traralgon	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	8.2	Met
Footscray	0	Met	9.8	Met
Geelong South	0	Met	5.7	Met
Traralgon	0	Met	6.0	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
Alphington	1	Met	1	Met
Dandenong	1	Met	2	Not Met
Footscray	2	Not Met	2	Not Met
Geelong South	1	Met	2	Met
Melton	2	Not Met	3	Not Met
Point Cook	0	Not Met*	0	Not Met*

* Data capture 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	1.1	Met
Altona	0	Not Met*	0	Not Met*	7.3	Not Met*
Geelong South	0	Not Met*	0	Not Met*	1.5	Not Met*
Traralgon	0	Met	0	Met	3.0	Met

* Data capture 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	7	Not Met
Dandenong	9	Not Met
Footscray	1	Not Met*
Geelong South	6	Not Met
Mooroolbark	4	Not Met
Traralgon	9	Not Met

* Data capture less than 75%

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 (µg/m ³)	
Alphington	7	7.84	Not Met
Footscray	8	8.47	Not Met
Geelong South	6	7.78	Not Met
Melbourne CBD	10	7.84	Not Met
Traralgon	5	8.99	Not Met

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Queensland by the Hon Meaghan Scanlon MP, Minister for the Environment and the Great Barrier Reef and Minister for Science and Youth Affairs, for the reporting year ended 30 June 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- This report contains data from 1 January 2020 to 31 December 2020 and relevant events during the reporting year (commencing 1 July 2020 and ending 30 June 2021).
- 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 2020–21 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 two additional reporting sites, were operational. Monitoring at five of the six remaining sites concluded prior to 2020–21 due to completion of campaign monitoring or site closure following termination of the monitoring site lease by the property owner.
- While monitoring at an additional monitoring site in Mount Isa (Menzies) concluded during the previous reporting period (2 June 2020) sulfur dioxide 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 2020.
- Collection of PM_{2.5} and PM₁₀ data using Teledyne Advanced Pollution Instrumentation (TAPI) T640X optical particle spectrometers continued at Townsville (North Ward) and West Mackay during 2020.
- During 2020–21, station upgrades to replace previous PM₁₀ only monitoring by TEOM Model 1405 instrumentation with monitoring of both PM_{2.5} and PM₁₀ using Teledyne Advanced Pollution Instrumentation (TAPI) T640X optical particle spectrometers took place at Mountain Creek and Flinders View in South East Queensland on 4 February and 5 February 2021 respectively, and at The Gap in Mount Isa on 24 May 2021.
- Collection of PM_{2.5} and PM₁₀ data using Teledyne Advanced Pollution Instrumentation (TAPI) T640X optical particle spectrometers commenced at Deception Bay in South East Queensland on 12 February 2021.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

- The results of Queensland's ambient air quality monitoring in 2020 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, 24-hour average PM₁₀ concentrations in Mount Isa and South East Queensland due to regional windblown dust events and/or local dust generating activities, and 24-hour average PM_{2.5} concentrations at Springwood in South East Queensland due to smoke from a bushfire.
- 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 8 and 14 days respectively during 2020 due to industrial emissions.
- There was a total of 26 exceedances of the AAQ NEPM PM₁₀ 24-hour standard (the numerical threshold) across Queensland performance monitoring sites during 2020. All but one of these exceedances were directly attributed to an exceptional event (region-wide windblown dust) and, as such, were excluded from the determination of compliance with the 24-hour AAQ NEPM goal. The remaining 24-hour PM₁₀ exceedance occurred at Flinders View in South East Queensland on 20 July 2020 and was the result of local dust generating activities exacerbated by dry conditions.
- There was one exceedance of the AAQ NEPM PM_{2.5} 24-hour standard across Queensland performance monitoring sites during 2020. This exceedance was directly attributed to an exceptional event (bushfire smoke) and, as such, was excluded from the determination of compliance with the AAQ NEPM 24-hour goal.
- Valid assessment of compliance with the standards and goals for sulfur dioxide at Menzies in Mount Isa was not possible due to low data availability caused by decommissioning of the site on 2 June 2020 following the sale of the property on which the monitoring station was located. Valid assessment of compliance with the standards and goal for PM₁₀ at Springwood in South East Queensland was also not possible due to low data availability in one quarter (July to September) resulting from persistent instrument faults.

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

The data are presented in greater detail in the Queensland 2020 air monitoring report available at <https://www.qld.gov.au/environment/management/monitoring/air/air-reports>

The monitoring plan for Queensland is available from <https://www.qld.gov.au/environment/management/monitoring/air/air-reports>

CO Carbon monoxide

(NEPM standard rolling 8 hour = 9.0ppm)

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

NO₂ Nitrogen Dioxide

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

Station	1 hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
South East Queensland				
Mountain Creek	0	Met	0.003	Met
Deception Bay	0	Met	0.004	Met
Rocklea	0	Met	0.006	Met
Springwood	0	Met	0.005	Met
Southport	0	Met	0.004	Met
Flinders View	0	Met	0.007	Met
Gladstone				
South Gladstone	0	Met	0.005	Met
Townsville				
North Ward	0	Met	0.002	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	0	Met
Springwood	0	Met	0	Met
Southport	0	Met	0	Met
Flinders View	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
South East Queensland						
Springwood	0	Met	0	Met	<0.001	Met
Flinders View	0	Met	0	Met	<0.001	Met
Gladstone						
South Gladstone	0	Met	0	Met	0.002	Met
Townsville						
North Ward	0	Met	0	Met	<0.001	Met
Mount Isa						
Menzies	8	Not Met	0	ND [#]	insufficient data	ND [#]
The Gap	14	Not Met	0	Met	0.004	Met

Not demonstrated (ND) due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to closure of the monitoring station in June 2020.

Pb Lead

(NEPM standard 1 year = 0.50µg/m³)

Station	Annual average (µg/m ³)	NEPM goal compliance
Townsville		
Coast Guard	0.13	Met
Mount Isa		
The Gap	0.09	Met

PM₁₀ Particles as PM₁₀

(NEPM standard 1 day = 50µg/m³ (excluding exceptional events), 1 year = 25µg/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 ⁺	3 (3 [*])	Met	16.0	Met
Rocklea [†]	2 (2 [*])	Met	13.1	Met
Springwood [†]	2 (2 [*])	ND [#]	11.8	ND [#]
Southport [†]	1 (1 [*])	Met	13.4	Met
Flinders View ⁺	4 (3 [*])	Not Met	17.6	Met
Gladstone				
South Gladstone [‡]	0	Met	13.0	Met
Mackay				
West Mackay [‡]	0	Met	17.0	Met
Townsville				
North Ward [‡]	0	Met	16.2	Met
Mount Isa				
The Gap ⁺	14 (14 [*])	Met	20.2	Met

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

+ Monitoring by TEOM Model 1405 instrumentation.

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

‡ Monitoring by TAPI T640X optical particle spectrometer.

Not demonstrated (ND) – Insufficient data (i.e. less than 75 per cent) in one quarter due to persistent instrument faults.

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 ⁺	0	Met	6.0	Met
Springwood ⁺	1 (1 [*])	Met	4.7	Met
Southport ⁺	0	Met	5.3	Met
Gladstone				
South Gladstone ⁺	0	Met	5.6	Met
Mackay				
West Mackay [‡]	0	Met	5.9	Met
Townsville				
North Ward [‡]	0	Met	5.8	Met

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

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

‡ Monitoring by TAPI T640X optical particle spectrometer.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Western Australia by the Hon Amber-Jade Sanderson MLA, Minister for Environment; Climate Action; Commerce, for the reporting year ended 30 June 2021.

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 protocol 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 monitoring stations. Most recently a site was established at Armadale in July 2020. Reporting from this site will commence in 2021.
- maintained monitoring of carbon monoxide, oxides of nitrogen, ozone, sulfur dioxide and PM₁₀ and PM_{2.5} particle fractions.

In the second category, DWER has:

- continued to implement the Perth Air Quality Management Plan (AQMP). The AQMP is a whole-of-government plan aimed at improving and maintaining Perth's air quality. Implementation of a number of priority actions within the AQMP has commenced in addition to a number of ongoing programs.
- continued to investigate and trial a number of new monitoring technologies designed to establish a better understanding of the sources and emissions of pollutants and the dispersion of these pollutants in targeted areas. This includes monitoring campaigns that survey air quality in residential and other sensitive receptor areas, particularly where these areas may be impacted by industrial emissions.
- maintained community access to the regularly updated air quality index 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 2020 except for daily average PM₁₀ at Caversham, Geraldton, Kalgoorlie and Mandurah and daily average PM_{2.5} at Bunbury, Caversham, Duncraig, Kalgoorlie, Mandurah, Quinns Rocks and South Lake. The annual average goal for PM_{2.5} was not met at Busselton, Mandurah and Geraldton and the annual average goal for PM₁₀ was not met at Mandurah.

The Mandurah site is the closest station to the coast and has been recording a relatively large number of exceedances of the daily PM₁₀ standard, which are due to sea-salt from the ocean. While these exceedances are assessable according to the current classification, marine aerosol is not harmful to human health.

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 www.der.wa.gov.au/your-environment/air/203-air-quality-publications.

The monitoring plan for Western Australia is available from www.der.wa.gov.au.

CO Carbon monoxide

(NEPM standard 8 hours = 9.0ppm)

Station	Number of exceedances	NEPM goal compliance
Perth		
North East Metro	0	Met
North Metro	0	Met
South East Metro	0	Met
Peel		
Mandurah	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	0.005	Met
North East Metro	0	Met	0.004	Met
Outer North Coast	0	Met	0.004	ND
South Coast	0	Met	0.004	Met
Outer East Rural	0	Met	0.002	Met
South East Metro	0	Met	0.006	Met
Inner West Coast	0	Met	0.004	Met
Peel				
Mandurah	0	Met	0.002	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
Perth				
North East Metro	0	Met	0	Met
Outer North Coast	0	Met	0	Met
South Coast	0	Met	0	Met
Outer East Rural	0	Met	0	Met
South East Metro	0	Met	0	Met
Inner West Coast	0	Met	0	Met
Peel				
Mandurah	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	0.001	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 = $0.50\mu\text{g}/\text{m}^3$)

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

PM₁₀ Particles as PM₁₀

(NEPM standard 1 day = $50\mu\text{g}/\text{m}^3$, 1 year = $25\mu\text{g}/\text{m}^3$)

Station	1 day		1 year	
	Number of exceedances	NEPM goal compliance	Annual average ($\mu\text{g}/\text{m}^3$)	NEPM goal compliance
Perth				
North East Metro ¹	3	Not Met	15.1	Met
North Metro ¹	1	Not Met	13.4	Met
Outer North Coast ²	1	ND	12.5	ND
South East Metro ¹	0	Met	13.9	Met
Peel				
Mandurah ²	30	Not Met	26.6	Not Met
Southwest				
Albany ¹	0	Met	14.2	Met
Bunbury ¹	1	Not Met	15.5	Met
Collie ¹	5	Not Met	18.1	Met
Midwest				
Geraldton ¹	3	Not met	20.9	Met
Goldfields				
Kalgoorlie ²	4	Not met	14.2	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.

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/m³)	NEPM goal compliance
Perth				
North East Metro ¹	9	Not Met	7.8	Met
North Metro ¹	2	Not Met	6.3	Met
Outer North Coast ²	1	ND	5.4	ND
South East Metro ¹	4	Not Met	7.2	Met
Peel				
Mandurah ²	5	Not Met	10.0	Not Met
Southwest				
Bunbury ¹	11	Not Met	7.9	Met
Busselton ¹	5	Not Met	8.1	Not Met
Midwest				
Geraldton ¹	1	Not met	8.0	Met
Goldfields				
Kalgoorlie ²	2	Not met	4.7	Met

1 1400AB Tapered Element Oscillating Microbalance (TEOM) operating continuously (unadjusted for temperature) and includes the manufacturers recommended equivalency factor of 1.03x + 3.00.

2 1405 TEOM operating continuously (unadjusted for temperature) and includes no equivalency factor.

ND = Not demonstrated.

Location descriptors for metropolitan monitoring stations

Location descriptor	Station Location	Location descriptor	Station Location
North East Metro	Caversham	South Coast	Rockingham
North Metro	Duncraig	Inner West Coast	Swanbourne
South East Metro	South Lake	South Metro	Wattleup
Outer East Rural	Rolling Green		

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 2021.

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.
- Monitoring is generally conducted in accordance with the Ambient Air Quality Monitoring Plan for South Australia, developed under the AAQ NEPM, and PRC Technical Papers. In 2020, the monitoring network was modified; Kensington station was removed following requests by the landowner, and Elizabeth station was temporarily decommissioned due to safety issues.
- South Australia has made access to air quality monitoring data available on a variety of publicly available platforms and has made improvements to data visualisation.
- In January 2020, bushfires in South Australia and the Eastern states led to numerous PM₁₀ and PM_{2.5} exceedances at all monitoring sites.
- South Australia has implemented nationally consistent air quality categories based on the recommendations provided by the enHealth committee of the Australian Health Protection Principal Committee (AHPPC).
- Dust storms from arid land were the major cause of PM₁₀ exceedances at Port Pirie and Whyalla monitoring sites.
- There were no other significant implementation issues.
- South Australia is working with other jurisdictions on the implementation of the varied NEPM in 2021 for the gaseous pollutants O₃, NO₂, and SO₂.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Data for South Australia shows that air quality was generally good in 2020.

In the Adelaide metropolitan region:

- Carbon monoxide – carbon monoxide monitoring at Birkenhead showed concentrations were far below the NEPM standard. The data has not been included in the Report as Birkenhead is not a NEPM site.
- Nitrogen dioxide – the 1-hour and 1-year standards and goals were met at all Adelaide monitoring stations, except Netley where they were not demonstrated.
- Ozone – the 1-hour and 4-hour standards and goals were met at Christie Downs and Northfield, Netley, and North Haven.
- Sulfur dioxide – the 1-hour, 1-day and 1-year standards and goals were met at North Haven.
- Particles (PM₁₀) – the 1-day standard was not met at all monitoring stations. However, the 1-year standard was met at all sites, except Netley.
- Particles (PM_{2.5}) – the 1-year standard was met at both Netley and North Haven stations. The 1-day standard and goal were not met at both sites.

In the Spencer Region:

- Particles (PM₁₀) – compliance with the 1-day standard was not met at Port Pirie (Oliver Street) and Whyalla (Schulz Reserve), however the 1-year standard was met at both sites.
- Sulfur dioxide – the 1-hour, 1-day and 1-year standards and goals were met at Port Pirie (Oliver Street).
- Lead – the annual average standard and goal were met at both NEPM monitoring stations in Port Pirie.

Data from relevant monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goal were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. For averaging times shorter than one year, compliance with the NEPM goal is achieved if the standard for a pollutant is exceeded on no more than a specified number of days in a calendar year (one day per year for all pollutants except PM₁₀ and PM_{2.5} which 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 2020 – Compliance with the National Environment Protection (Ambient Air Quality) Measure available from https://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 https://www.epa.sa.gov.au/files/12061_airenpm.pdf.

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

- Hourly data available on request of the South Australia Environmental Protection Agency
- Summary reports https://www.epa.sa.gov.au/data_and_publications/air_quality_monitoring/reports_and_summaries
- Validated data <https://data.sa.gov.au/>

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
Adelaide				
CHD01 – Christie Downs	0	Met	0.004	Met
NET01 – Netley	0	ND*	0.007	ND*
NOR01 – Northfield	0	Met	0.005	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
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						
NHV01 – North Haven	0	Met	0	Met	0.001	Met
Spencer						
PTP01 – Pt Pirie Oliver street	0	Met	0	Met	0.003	Met

Pb Lead

(NEPM standard 1 year = 0.50µg/m³)

Station	Annual average (µg/m ³)	NEPM goal compliance
Spencer		
PTP05 – Pt Pirie Frank Green Park	0.19	Met
PTP05 – Pt Pirie Oliver Street	0.44	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/m³)	NEPM goal compliance
Adelaide				
CHD01 – Christie Downs	3	Not Met	15.5	Met
NET01 – Netley	8	Not Met	27.8	Not Met
NHV01 – North Haven	4	Not Met	16.2	Met
Spencer				
PTP01 – Pt Pirie Oliver Street	17	Not Met	23.6	Met
WHY07 – Whyalla Schulz Reserve	9	Not Met	19.3	Met

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/m³)	NEPM goal compliance
Adelaide				
NET01 – Netley	1	Not Met	5.4	Met
NHV01 – North Haven	1	Not Met	4.8	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, for the reporting year ended 30 June 2021.

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 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 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, such as planned burning activities. The policy is available on the EPA Tasmania's website at <https://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, provides 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 the EPA Division 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 the EPA Division web site. A number of Tasmanian towns have been found to experience very poor winter-time air quality due to smoke from residential woodheaters.

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 Division'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.

COVID-19 lockdown restrictions significantly affected maintenance and service visits to Tasmania's NEPM air stations, and hence data availability, from April to July 2020.

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

Since winter 2016 small, indicative-quality air stations have been deployed in a number of residential backyards as part of work undertaken with local government supporting chimney-smoke complaint-resolution. The small stations, known as 'babyBLANKETs', are easily relocatable and are of low-cost. The data from these stations have at times assisted councils with their regulatory activities and also, importantly, provide a window into 'peak-residential' woodsmoke exposure. The local air quality has been found to be significantly 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.

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 2020, however there were three days above the standard in January 2020 due to bushfire smoke. Data capture rates and the annual average value are not yet available due to added complexity in the data quality assurance process for this station related to the COVID lockdown in March-July 2020.

PM_{2.5}

The 24-hour PM_{2.5} standard of 25 µg/m³ was exceeded on seven days in Launceston in 2020 (with four additional days above the standard due to bushfire smoke). This is lower than results from recent years (10 in 2018; 16 in 2017, nine in 2016, 12 in 2015, 11 in 2014, 12 in 2013, 16 in 2012; six in 2011; 11 in 2010; and 12 in 2009), but no data are available in the second quarter of 2020, due to COVID restrictions preventing station operation. Overall, the 2020 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 7.5 µg/m³ is below 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), but as noted no data are available for quarter 2 due to COVID.

Hobart**PM₁₀**

In Hobart in 2020 there were no exceedances of the 24-hour PM₁₀ standard, though one day in January was above this level due to bushfire smoke. Provisional data capture rates in each quarter were 100%, 100%, 98%, and 100% and 99% annually. The annual average PM₁₀ level was 13.5 µg/m³, which meets the annual PM₁₀ standard of less than 25 µg/m³.

PM_{2.5}

There was one exceedance of the 24-hour standard for PM_{2.5} of 25 µg/m³ in Hobart in 2020, and one additional day above the standard due to bushfire smoke. The annual average PM_{2.5} concentration of 5.9 µg/m³ was below the annual average PM_{2.5} standard of 8 µg/m³, but no data are available in quarter 2, 2020, due to COVID restrictions preventing instrument operation.

Devonport**PM₁₀**

There were no exceedances of the 24-hour PM₁₀ standard recorded at Devonport in 2020, however three days above the standard occurred in January, due to bushfires. The annual average PM₁₀ level was 15.6 µg/m³, which is below the annual PM₁₀ standard of less than 25 µg/m³. However, provisional quarterly data capture rates were 75%, 74%, 89%, and 100%, with an annual rate of 84%.

PM_{2.5}

The 24-hour PM_{2.5} concentrations measured in Devonport did not exceed the PM_{2.5} standard of 25 µg/m³. However, two days were above the standard due to bushfires in January 2020. The annual average PM_{2.5} concentration of 6.2 µg/m³ is below the annual standard of 8 µg/m³. However, no data are available in quarter 2, 2020, due to COVID restrictions preventing instrument operation.

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 Tasmania's annual reports.

The monitoring plan for Tasmania is available from the EPA Tasmania web site 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
(NEPM standard 8 hours = 9.0ppm)

NO₂

Nitrogen Dioxide
– not measured in Tasmania
(NEPM standard: 1 hour = 0.12ppm, 1 year = 0.03ppm)

O₃

Ozone
– not measured in Tasmania
(NEPM standard: 1 hour = 0.10ppm, 4 hours = 0.08ppm)

SO₂

Sulfur dioxide
– not measured in Tasmania
(NEPM standard: 1 hour = 0.20ppm, 1 day = 0.08ppm, 1 year = 0.02ppm)

Pb

Lead
– not measured in Tasmania
(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	0
Launceston	0	0
Devonport	0	0

PM_{2.5}

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

Station	1 year	
	Number of exceedances	Annual average (µg/m³)
Hobart	1	5.9
Launceston	7	7.5
Devonport	0	6.2

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for the Australian Capital Territory by Ms Rebecca Vassarotti MLA, Minister for the Environment, for the reporting year ended 30 June 2021.

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 AAQ NEPM) Technical Papers and ACT Health's National Association of Testing Authorities' accreditation.

The ACT's air quality in 2020 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 (PM_{10}) against a lower standard of $20\mu g/m^3$ rather than the NEPM standard of $25\mu g/m^3$ from 2016.

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

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The ACT Government has been undertaking ambient air quality monitoring in Canberra since the early 1990s. The ACT monitoring network consists of three monitoring stations but only two are used for NEPM reporting, namely Florey and Monash.

A summary of the 2020 monitoring:

- the major air quality issue in 2020 was particle pollution (both PM_{10} and $PM_{2.5}$) between January to early February, primarily associated with the continued impact of the 2019–2020 summer bushfires;
- while concentrations of carbon monoxide and nitrogen dioxide increased during the bushfire period, the associated AAQ NEPM standards were met on 99.5% of days during the year;
- ozone remained at relatively high levels in January 2020 compared with the rest of the year, meeting the AAQ NEPM standards on 99% of days throughout the year;
- though more nitrogen dioxide and ozone exceedances were recorded in the ACT, the overall levels for those two pollutants in 2020 decreased compared with 2019. This is possibly due to less vehicle traffic and other human activities as a result of the COVID-19 pandemic restrictions and the cooler temperatures in the second half of 2020;
- the daily PM_{10} standard was exceeded on 27 days at one or more monitoring stations, compared to 29 days in 2019 and 6 days in 2018. All of the PM_{10} exceedances occurred outside the winter season and were due to bushfires or dust storms;
- the daily $PM_{2.5}$ standard was exceeded on 39 days at one or more monitoring stations, compared to 32 days in 2019 and 5 days in 2018. Excluding the 26 exceedance days directly associated with bushfires, there were only 13 exceedance days related to wood heater emissions which occurred between mid-May and early August; and
- a possible cause of this increase in $PM_{2.5}$ may be due to people staying at home more during the COVID-19 pandemic. As a comparison, there were only 2 days in 2019 and 1 day in 2018 that exceeded the national standard in winter months.

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

The data are presented in greater detail in the ACT Air Quality report which can be found here https://www.accesscanberra.act.gov.au/_data/assets/pdf_file/0008/2367881/ACT-air-quality-report-2021.pdf.

The ACT Government recognises emissions from wood heaters remains a community concern during the winter months and has a range of initiatives to address this issue. These include public education and enforcement activities, the regulation of commercial firewood to ensure it is sold in a seasoned condition, the Wood Heater Replacement Program to remove old inefficient heaters, and the Burn Right Tonight public education campaign on the correct use of a wood heater.

The ACT Government has also recently announced the Sustainable Household Scheme which will offer zero-interest loans of between \$2,000 to \$15,000 to support eligible ACT households to live more comfortably, reduce emissions and their energy costs. This scheme will complement the Wood Heater Replacement Program which assists with the cost of replacing a wood heater with an energy efficient electric system for eligible households.

The ACT Government prohibits wood heaters in new development areas where planning studies show that they would have an adverse impact on air quality and has taken this approach for the development of the Molonglo Valley (except Wright), and previously with the suburbs of Dunlop and East O'Malley.

CO Carbon monoxide

(NEPM standard rolling 8 hour = 9.0 ppm)

Station	Number of exceedances	NEPM goal compliance
Florey	2	Not Met
Monash	2	Not 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
Florey	2	Not Met	0.004	Met
Monash	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
Florey	2	Not Met	3	Not Met
Monash	2	Not Met	4	Not Met

PM₁₀

Particles as PM₁₀

(NEPM standard 1 day = 50µg/m³, 1-year average = 20 µg/m³ (ACT Standard))

Station	1 day		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (µg/m ³)	ACT goal compliance
Florey	0	Met	22.8	Not Met
Monash	0	Met	22.4	Not Met

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)	ACT goal compliance
Florey	12	Not Met	17.8	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 MLA, Minister for Environment, for the reporting year ended 30 June 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The Northern Territory Environment Protection Authority (NT EPA) 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*.
- Air pollutants are routinely monitored at three ambient air quality monitoring stations, Palmerston, Winnellie and Stokes Hill, all located within the Greater Darwin Region.
- 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.
- In September 2020, a new ambient air quality monitoring station was commissioned in Katherine to monitor particulates in air. The station was installed and operated by Katherine Town Council (KTC) as part of a performance agreement between the NT EPA and KTC.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

During 2020, compliance with NEPM goals for air pollutants sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3) and particulates (as PM_{10} and $PM_{2.5}$) were met at all the ambient air quality monitoring stations in the Darwin region. As explained below, although some exceedances were recorded for PM_{10} and $PM_{2.5}$, compliance with the NEPM goals were met since exceedances were attributed to exceptional events. No exceedances of the carbon monoxide (CO) goal were recorded in Darwin; however, compliance with the NEPM was not demonstrated at Palmerston and Stokes Hill stations for CO, due to low data recovery rates in the 2nd and 3rd quarters caused by instrument outage.

PM_{10}

Compliance with the NEPM goal for particulates as PM_{10} was met at all the Darwin 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 during 2020 were linked to hazard reduction burns or other natural fire activities, which are considered exceptional events. All the Darwin 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 2020, 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. All the Darwin monitoring sites also complied with the 1-year $PM_{2.5}$ standard.

The Katherine station was commissioned in September 2020, so there was insufficient data collected at this location to access compliance with the NEPM.

Data from relevant monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goal were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. For averaging times shorter than one year, compliance with the NEPM goal is achieved if the standard for a pollutant is exceeded on no more than a specified number of days in a calendar year (one day per year for all pollutants except 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 8 hours = 9.0ppm)

Station	Number of exceedances	NEPM goal compliance
Darwin		
Palmerston	0	ND*
Stokes Hill	0	ND*
Winnellie	0	Met

* ND – Not demonstrated due to insufficient data (i.e. less than 75%) caused by extended monitoring equipment outages at Palmerston and Stokes Hill stations.

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
Darwin				
Palmerston	0	Met	0.0026	Met
Stokes Hill	0	Met	0.0019	Met
Winnellie	0	Met	0.0026	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
Darwin				
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
Darwin						
Palmerston	0	Met	0	Met	0.0005	Met
Stokes Hill	0	Met	0	Met	0.0005	Met
Winnellie	0	Met	0	Met	0.0006	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 (µg/m ³)	NEPM goal compliance
Katherine				
Katherine	0	ND**	13.6	ND**
Darwin				
Palmerston	1	Met	18.3	Met
Stokes Hill	0	Met	17.8	Met
Winnellie	1	Met	16.9	Met

* All exceedances were determined to be directly associated with exceptional events.

** ND – Not demonstrated due to insufficient data (i.e. less than 75%): Katherine station was commissioned in September 2020.

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
Katherine				
Katherine	1	ND**	7.8	ND**
Darwin				
Palmerston	7	Met	7.0	Met
Stokes Hill	4	Met	6.4	Met
Winnellie	7	Met	6.5	Met

* All exceedances were determined to be directly associated with exceptional events.

** ND – Not demonstrated due to insufficient data (i.e. less than 75%): Katherine station was commissioned in September 2020.

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 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Australian Government continues to implement the NEPM administratively on Commonwealth land across Australia.

The Assessment of Site Contamination (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 also support other collaborative work among the Commonwealth, states, and territories on contamination issues, such as Per- and Polyfluoroalkyl Substances (PFAS).

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. Version 2.0 of the PFAS NEMP was agreed by governments and published in May 2020. Additional guidance is under development for version 3.0.

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* and the *Sea Dumping Act 1981*. The NEPM 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 would be an opportunity to develop additional investigation levels for contaminants such as PFASs, persistent organic pollutants, environmentally mobile chemicals, and endocrine disrupting chemicals. It would also provide an opportunity to update the techniques for laboratory analysis of toxicants in air, soil, and water. This review could build on lessons learned through development of the PFAS NEMP.

New South Wales

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure New South Wales by the Hon Matt Kean MP, Minister for Energy and Environment, for the reporting year ended 30 June 2021.

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). The NEPM is approved as a statutory guideline by the EPA under Section 105 of the Act.
- In 2020–21, the EPA was notified of 49 contaminated sites, 12 new sites were declared to be significantly contaminated under the Act, and regulation of 6 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 2020–21 accredited site auditors issued 307 site audit statements following 244 statutory audits and 63 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), being finalised in response to consultation submissions, 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 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

As previously noted, the transition period for the revised ASC NEPM finished in May 2014 and there now seems to be widespread acceptance and use of it, in name.

Issues of note:

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

In response, Victoria has contributed to the following:

- As part of the reform to the environment protection framework, EPA Victoria has a dedicated waste team who have worked to address the characterisation of soil/fill in waste regulations and associated guidelines to make it clear what will go to landfill and this included a review of soil fill acceptance criteria.
- The National Contaminated Environments Network, which comprises representatives of the contaminated sites regulators of Australia, has written to enHealth seeking advice on the protectiveness of the current HIL for lead provided in the NEPM.
- The National Contaminated Environments Network has informed the NEPC secretariat of the omission of acetone/hexane and requested it for inclusion in the errata.
- The NEPM has been incorporated into the subordinate legislation framework under the *Environment Protection 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 update of the PFAS NEMP 2.0.

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 work.

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.

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) for Queensland by the Hon Meaghan Scanlon MP, Minister for Environment and the Great Barrier Reef, Minister for Science, and Youth Affairs, for the reporting year ended 30 June 2021.

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 28 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 2020–21:
 - 46 sites were listed on the EMR for a hazardous contaminant
 - 97 sites were listed on the EMR as a notifiable activity.
 - DES appointed two contaminated land auditors during 2020–2021, under the mutual recognition framework on the basis of approvals held in other jurisdictions. Auditor applications are assessed by a DES technical panel who review contaminated land auditor applications.
 - 35 sites were finalised during the reporting period as being adequately assessed according to the NEPM, remediated and removed from the EMR.
 - 22 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.
 - 170 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 28 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 the Hon Amber-Jade Sanderson MLA, Minister for Environment; Climate Action; Commerce, for the reporting year ended 30 June 2021.

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 394 sites (including reclassifications) during the year, bringing the total number of classified sites to 4396. As of 30 June 2021, 1310 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 2021, 133 known or suspected contaminated sites were reported to the department compared with 194 in the previous year.
- In the same period, the department received 61 mandatory audit reports related to contaminated sites, and a further 52 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 in Western Australia 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 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The South Australian Environment Protection Authority (EPA) is responsible for administering the implementation of the *National Environment Protection (Assessment of Site Contamination) Measure* (the ASC NEPM) in South Australia.
- Site contamination is regulated by the EPA through a framework established under the *Environment Protection Act 1993* (the Act).
- The ASC NEPM informs the EPA's established processes for the 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 2020–2021 reporting period, the EPA received 143 notifications of site contamination that affects or threatens underground water. In the same period, the EPA recorded 19 site contamination audit reports on the Public Register, required to be kept by the EPA under the Act. There were 23 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 supporting the implementation of the ASC NEPM in South Australia during the 2020/2021 reporting period included the following:
 - Preparation and release of a draft *Environment Protection (Site contamination) Policy* (EPP) under the Act for consultation. The draft EPP has been developed by the EPA to provide greater certainty and consistency in the assessment of site contamination in South Australia. The draft EPP links to mandatory guideline requirements which are currently under review.
 - Preparation of revised and updated 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 investigations to investigate identified risks to public health from legacy site contamination.
 - Use of the EPA regulatory framework, statutory tools under the Act and a certified practitioner policy to support consistency and predictability in regulatory decision-making in relation to site contamination.
 - 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 has released for consultation a draft Environment Protection (Site contamination) Policy under the Act to give mandatory effect to the ASC NEPM (as amended in 2013).

Development and planning

The planning system has an important role in ensuring risk posed by known or suspected site contamination is considered when land use changes or is otherwise developed. A new site contamination planning framework implemented under State-wide planning reforms commenced in March 2021.

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 continues to strongly support the development and implementation of an agreed national approach. Jurisdictions have been working collaboratively for some time to develop a case for the national harmonisation of auditor accreditation however the project currently remains under development, with ongoing delays due to competing priorities and resources within jurisdictions.

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. 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 2021

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 adopting 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 assessors' 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 the Australian Capital Territory by Ms Rebecca Vassarotti MLA, Minister for the Environment, for the reporting year ended 30 June 2021.

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).

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 ACT.

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

Whilst the NEPM continues to be an effective means of ensuring a nationally consistent approach to contamination assessment, changes to NEPC processes are required to allow for more timely inclusion of criteria for emerging contaminants of concern and the inclusion of guidance in relation to site remediation and management.

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 MLA, Minister for Environment, for the reporting year ended 30 June 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In the reporting period of 1 July 2020 to 30 June 2021 the Northern Territory (NT) has continued to implement the Assessment of Site Contamination National Environment Protection Measure (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.
- Asbestos, per-and poly-fluoro alkyl substances (PFAS) continue to be identified as contaminants of concern in the NT.
- Asbestos matters are being addressed through the implementation of an NT interagency asbestos committee, including development of an asbestos register which will form part of the contaminated sites register. The 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 and the Commonwealth have collaborated on issues such as the ongoing asbestos and PFAS issues identified at RAAF Base Darwin.
- The NT EPA has been actively involved in the investigation, assessment and management of sites that have potentially been impacted by PFAS. The NT EPA participates in a variety of PFAS steering committees and working groups, 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 Territory, to determine the presence or absence of sites impacted with PFAS. Based on the results, further investigations will be undertaken to determine appropriate management measures for identified sites. This work is being led by the NT PFAS Taskforce, funded for 3 years from July 2020 to June 2023.
- The NT EPA has responded to enquiries regarding historical sites that may pose a risk of contamination, including former wartime defence establishments, and waste disposal locations operating prior to self-governance and the subsequent formation of the NT Government and the local government entities.
- A challenge for the NT EPA includes the inappropriate use of the ASC NEPM to justify illegal dumping of waste or subsequent impacts caused by the illegally dumped waste.
- The ASC NEPM is also used in responses to pollution incidents where it is deemed appropriate to leave a certain level of contamination during the clean-up of the pollution incidents, or used to justify why clean-up of an incident shouldn't be required.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The NEPM and its NT sister document (Contaminated Land Guideline) has allowed for a 'level playing field' for site contamination assessment and remediation to be established in the Northern Territory. It continues to help ensure that all parties are aware of their requirements and responsibilities within the site assessment process, and assists, where appropriate, in developing clean-up end points in relation to potential risk to environmental receptors and human health.

It has provided 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 implementation of the ASC NEPM within the NT is required to ensure that all parties are clearly aware of all requirements outlined within the ASC NEPM. This is being progressed through the continuing development of the strategies mentioned in Part 1 and further interaction and consultation with planning authorities, professional organisations such as the Australian Land and Groundwater Association, and the community. 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 2021.

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 346 retail fuel sites during 2020–21 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.

Proposals to change the Australian Design Rules to mandate emissions standards of Euro 6 (light vehicles) and VI (heavy vehicles) reached the stage of public consultation in October 2020. At this time the Department of Infrastructure, Transport Regional Development and Communications released two draft Regulation Impact Statements (RIS) that evaluate the costs and benefits of mandating these standards from 2027. These RISs build on previous consultation during 2016–17.

Public Comment on these two draft RISs closed in February 2021. Since then, the department commenced review the feedback received in the submissions before setting its proposed approach for a policy decision. It will also seek a policy decision for heavy vehicles by the end of 2021 and a policy decision for light vehicles in conjunction with the review of fuel quality standards.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Following internal consultations reviewing the need for 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.

The proposed National Clean Air Agreement (NCAA) 2021–2023 work plan encompasses work to evaluate the need for more stringent standards to reduce noxious emissions from light (petrol and diesel) and heavy (diesel) road vehicles in Australia. This recognises the prospect of introducing Euro 6/VI standards in Australia.

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 2021.

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 2020–21, NSW continued the Smoky Vehicles Program, the TfNSW Clean Fleet Program and diesel bus upgrade program and commenced the transition of the State's bus fleet to electric under the Net Zero Plan Stage 1: 2020–2030, and NSW Electric Vehicle Strategy.

NSW diesel fleet profile

TfNSW registration data show the proportion of diesel vehicles in the fleet constituted 21.51 per cent of the total NSW fleet as at 30 June 2021 (see Table 1 below). This is compared to 20.87 per cent in June 2020, and 20.22 per cent in June 2019.

TfNSW registration data indicate that, between June 2020 and June 2021, the number of diesel vehicles registered in NSW increased by 82,991 or 5.91 per cent. Light commercial vehicles increased by 8.66 per cent over this period and constitute the largest sector of the diesel fleet at 41.06 per cent. Off-road passenger vehicles account for 33.39 per cent of the diesel fleet. Together, these categories account for 74.45 per cent of the total diesel fleet in NSW. Table 2 shows changes in diesel vehicles by category between June 2020 and June 2021.

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

NSW June 2021	Diesel vehicle categories									
	Passenger vehicles	Off-road passenger vehicles	People movers	Light commercial vehicles	Heavy trucks	Prime movers	Small buses	Buses	Other	Total
Diesels in total NSW fleet	2.91%	7.18%	0.17%	8.83%	1.54%	0.35%	0.16%	0.19%	0.18%	21.51%
Vehicles by category in diesel fleet	13.51%	33.39%	0.77%	41.06%	7.15%	1.63%	0.76%	0.88%	0.84%	100%

Source: Transport for NSW registration data (June 2021)

Table 2: Change in diesel vehicles by category

Vehicle type	Number of diesel vehicles		Change (number)	Change (percentage)	Proportion of total decrease	Proportion of total increase
	Jun-20	Jun-21				
Passenger Vehicles	189,963	200,909	10,946	5.76%	0%	13.19%
Off-Road Passenger Vehicles	479,741	496,691	16,950	3.53%	0%	20.42%
People movers	11,063	11,488	425	3.84%	0%	0.51%
Small Buses	10,731	11,321	590	5.50%	0%	0.71%
Light Trucks	562,149	610,812	48,663	8.66%	0%	58.64%
Light Plants	879	820	-59	-6.71%	-0.07%	0%
Buses	12,650	13,044	394	3.11%	0%	0.47%
Heavy Trucks	103,909	106,416	2,507	2.41%	0%	3.02%
Prime Movers	22,564	24,294	1,730	7.67%	0%	2.08%
Heavy Plants	3,118	3,085	-33	-1.06%	-0.04%	0%
Other	7,679	8,557	878	11.43%	0%	1.06%
Total	1,404,446	1,487,437	82,991	5.91%	N/A	N/A

Source: Transport for NSW registration data (June 2021)

Diesel vehicle emissions estimates

Diesel vehicles made up 21.51 per cent of the total NSW fleet as at 30 June 2021, 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 Sydney¹ region in 2013.

Based on the latest projections from the 2013 Air Emissions Inventory for the NSW Greater Metropolitan Region, diesel vehicles currently contribute approximately 80 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 $\text{PM}_{2.5}$ 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 $\text{PM}_{2.5}$ emissions is larger than the rate of increase in vehicle kilometres travelled, resulting in a decrease of greater than 50% in exhaust $\text{PM}_{2.5}$ emissions from the diesel fleet, more than offsetting an estimated 25% increase in non-exhaust $\text{PM}_{2.5}$ emissions (brake, tyre and road wear) arising from the increase in vehicle kilometres travelled.

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

- 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. The increase in NO_x emissions from light duty diesel vehicles is estimated to offset the heavy-duty fleet reductions resulting in an increase in total diesel fleet NO_x emissions.

In March 2021, the NSW Government made a formal submission to a Commonwealth Regulatory Impact Statement on Australian vehicle emission standards. The NSW submission strongly supported adopting the latest and most health protective (Euro6/VI) emission standards for light and heavy-duty vehicles and called for introduction of the tighter standards for diesel vehicles at the earliest possible time ahead of the RIS proposal of 2027–28. 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 168 smoky vehicle reports are received each month from the public (more than 2,000 public reports over the year), indicating a high level of awareness in the community of the unacceptability of excessive visible emissions.

In 2020–21, the EPA issued 810 advisory letters based on public reports, of which 628 advisory letters were to diesel vehicle owners.

Additionally, six defective vehicle notices were issued in 2020–21 of which five 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

	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
Total number of vehicles that received fines	186	114	289	78	89	75	6	0	0	0
Diesel vehicles that received fines	173	109	283	76	89	74	6	0	0	0
<i>Percentage of all vehicles fined that were diesel vehicles</i>	93%	96%	98%	97%	100%	99%	100%	0	0	0
Total vehicles that received advisory and warning letters	556	552	891	812	782	957	681	835	804	810
Diesel vehicles that received advisory and warning letters	96	74	462	423	433	475	438	623	621	628
<i>Percentage of all vehicles that received advisory and warning letters that were diesel vehicles</i>	17%	13%	52%	52%	55%	50%	64%	75%	77%	78%

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 5,516 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 2020–21, 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.

As at June 2021 the State Transit Bus Fleet is comprised of 1,404 buses, with 87% of the fleet now Euro 3 or higher emissions standard, and 62.5% of the fleet Euro 5 or above (up from 58.3% Euro 5 or equivalent in 2019–2020). Some 65 buses or 0.8% of the fleet are of the highest Euro 6 standard State Transit overall fleet numbers and emissions are reduced compared to previous years, as bus services in some regions are now privately operated. Subsequently, State Transit's fleet size has decreased from 2046 buses as at June 2018, to 1404 as at June 2021. The State Transit bus fleet is certified against the TfNSW Clean Fleet Program until May 2023.

The NSW Government's [Net Zero Plan Stage 1: 2020–2030](https://www.environment.nsw.gov.au/topics/climate-change/net-zero-plan) (<https://www.environment.nsw.gov.au/topics/climate-change/net-zero-plan>), and [NSW Electric Vehicle Strategy](https://www.environment.nsw.gov.au/topics/climate-change/net-zero-plan) (<https://www.environment.nsw.gov.au/topics/climate-change/net-zero-plan>) also identify commitments to replace the State's bus fleet with electric buses. Transport for NSW rolled out over 50 electric buses across Sydney in early 2021 in the first phase of this work.

Construction industry

In 2020–21 the Department of Planning, Industry and Environment (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, and is on request of the New South Wales Department of Environment and Heritage.

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 all new buildings and infrastructure and upgrades to existing buildings and infrastructure 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 accompanied with their equipment's air emissions data. 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 *Protection of the Environment Operations Act 1997* 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.

The requirements in the licence are for new locomotives to meet US Tier 2 particulate matter emissions. There are no air emission limits for locomotives already operating on the rail network. However, the licences include operating conditions and pollution studies that seek to minimise impacts on air quality through idling. Further, the EPA will work with the rail industry to progressively reduce locomotive air emissions.

Victoria

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for Victoria by the Hon Lily D'Ambrosio, Minister for Energy, Environment and Climate Change, for the reporting year ended 30 June 2021.

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 risen by 3.2% (energy.gov.au) and the number of diesel vehicles registered in Victoria has risen by 6% (abs.gov.au). Fuel sales had rebounded from the previous year's Covid affected reduction. Emissions from diesel engines are likely to have gone up due to the increased fuel consumption, outweighing any gains from engine efficiency from one year to the next.

Smoky vehicles program

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 2020/2021, there were no letters issued due to the Covid 19 restrictions and service diversion to supporting the pandemic response.

The following table indicates the number of smoky vehicle letters being sent from the public and official reporting programs over the past ten years. Generally, there is a slow downward trend in the number of letters issued over recent years in both streams of the program.

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	2011/12	2012/13	2013/14*	2014/15*	2015/16*	2016/17	2017/18	2018/19	2019/20	2020/21
Number of letters from public reports	4895	3910	2012	2124	1901	1815	1777	842	-	-
Number of letters from official reports	495	554	145	193	95	196	459	198	-	-
Total number of letters	5390	4464	2157	2317	1996	2011	2236	1040	973	0

* 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 2021.

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 2—ASSESSMENT OF NEPM EFFECTIVENESS

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

Air quality in Queensland for the reporting period ending 30 June 2021 has been generally good. Monitored pollutants have exceeded national standards or guidelines very few times, complying with national air quality standards for four of the six major air pollutants. During the reporting period, there have been only seven 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 three poor days, Mackay two poor days, and Townsville one poor day in the reporting period. The air quality trend for human health found zero poor days registered in Gladstone, Mackay and Townsville, six poor days in SEQ and 31 poor days in Mount Isa during the reporting period.

There have been occasional periods of elevated particle levels in SEQ and Mount Isa during the reporting period, however, these are associated with 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.

The dataset was expanded with similar data collected in Perth and analysed, resulting a publication in an international journal (*Atmos. Env.*, 252, 2021). The main findings relate to poor performance of diesel vehicles in Australia with high NO_x emissions. In addition, a consistent reduction in smoke emissions with Euro standard was not observed for diesel light duty vehicles. Malfunctioning, removed, or lack of diesel particulate filters (DPF) is a larger issue in Australia than in the UK. Australian light duty vehicles show 1–4% DPF failure for 1-year-old vehicles and up to 20% for 5-year-old vehicles.

Smoky vehicles program

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

Once reported data is matched with the information provided, a letter 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 2020 to 30 June 2021 there were a total of 2,625 vehicles reported through the smoky vehicle online reporting form in Queensland. Of the reported vehicles 1,002 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 19,783 heavy vehicles while private approved inspection stations inspected a further 50,711. 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.

The decision has been made to not re-open the facility. The decision was based on a number of factors including:

- Multiple laboratory grade items have reached or exceeded serviceable life and are no longer supported by Original Equipment Manufacturers (OEMs)
- Testing numbers were steadily decreasing over time
- Testing under DT80 is no longer deemed effective as an incentive to encourage maintenance of emission systems to meet fuel tax credit environmental criterion 3
- The BCC no longer operates vehicles manufactured prior to 1996.

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 consulted the BCC around identification of defeat or tampering of devices that may alter emissions.

The focus was primarily looking at defeat or tampering of NO_x devices and defeat or tampering of PM devices.

The BCC advised:

- its testing facility was well suited to identify non-functioning NO_x control devices as NO_x emissions are easy to identify as a “point in time” activity
- identification of non-functioning PM control devices was difficult to identify other than physical tampering because correct operation of PM devices is cumulative over time.

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 43,619 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 977 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 1,156 Operators and 10,218 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 Amber-Jade Sanderson MLA, Minister for Environment; Climate Action; Commerce, for the reporting year ended 30 June 2021.

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 Western Australian Government's Perth Air Quality Management Plan (AQMP) aims to ensure that clean air is achieved and maintained throughout the Perth metropolitan region. The AQMP identifies that the management of emissions from in-service petrol and diesel vehicles is critical to achieving clean air, and contains 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 2020–21 the Smoky Vehicle Reporting Program received 685 reports, which is an average of 57 reports per month, representing an 18 per cent increase in reports from 2019–20. The number of reports received continues a trend of 15–20% increases each year in reports received observed in the last three 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. 576 advisory letters were sent to reported vehicle owners in 2020–21 (84 per cent valid report rate).

Table 1 summarises the responses received for vehicles reported from July 2020 to June 2021.

Table 1. Responses from owners of reported vehicles

Response	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
Reports received	268	455	480	415	482	579	685
Letters sent	N/A	372	424	353	417	505	576
Responses received	146	282	292	191	225	265	216 ²
Vehicle repaired	57 (48%)	127 (45.0%)	136 (46.6%)	129 (67.5%)	142 (63.1%)	174 (65.4%)	133 (61.6%)
Vehicle does not smoke	45 (38%)	90 (31.9%)	96 (32.9%)	49 (25.7%)	67 (29.8%)	71 (26.7%)	68 (31.5%)
Can't afford to repair	1 (<1%)	3 (1.1%)	6 (2.1%)	0 (0%)	0 (0.0%)	1 (0.4%)	0 (0.0%)
Disposed of vehicle	3 (2%)	8 (2.8%)	16 (5.5%)	5 (2.6%)	7 (3.1%)	12 (4.5%)	6 (2.8%)
Wrong vehicle	6 (5%)	11 (3.9%)	19 (6.5%) ³	1 (0.5%)	1 (0.4%)	2 (0.8%)	2 (0.9%)
Other	8 (7%)	40 (14.2%)	19 (6.5%)	7 (3.7%)	8 (3.6%)	6 (2.3%)	7 (3.2%)
Petrol	35 (30%)	57 (20.2%)	49 (16.8%)	66 (20.2%)	70 (16.8%)	95 (17.5%)	122 (19.1%)
Diesel	71 (60%)	194 (68.8%)	208 (71.2%)	259 (79.4%)	345 (82.7%)	443 (81.6%)	510 (79.7%)
LPG	2 (<2%)	1 (0.4%)	0 (0%)	0 (0%)	2 (0.5%)	5 (0.9%)	8 (1.3%)

2020–21 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 44 vehicles reported more than once in 2020–21, six of which were reported more than twice. Of the vehicles reported more than once, six vehicle owners responded to the advisory letters sent. One vehicle was reported five times, with no response received to the advisory letters sent to the vehicle owner.

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.

² Responses from July mailout event were still being received at the time of this report being prepared. It is likely this figure will be higher, but it is not expected to be higher than 2019–20. Response percentages are not expected to significantly change.

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

Diesel vehicle emission testing and repair programs

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

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 2021.

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

Not applicable.

Diesel vehicle retrofit programs

Not applicable.

Other programs

In 2019 the Department of Infrastructure and Transport (DIT) introduced a new specification, *PC-ST2 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);
- require sub-contractors for larger projects (i.e. >\$100 million) 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; and
- ensure fuel conforms with relevant quality standards.

These requirements are now reflected in DITs Road Maintenance Contract.

DIT is responsible for leading or supporting low emissions transport objectives under the *South Australian Government Climate Change Action Plan 2021–2025*, including:

- supporting the uptake of low and zero emissions vehicles and fuels
- aligning transport and urban planning with low emissions transport outcomes
- increasing the use of public transport and active travel.

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, for the reporting year ended 30 June 2021.

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 2021, there were 15,372 diesel powered heavy vehicles (that is vehicles over 4.5 tonnes) and 148,473 diesel powered light vehicles registered in the State. This represents an increase of 4.2 % and an increase of 6.8 % respectively since 1 July 2020. Of the total of 673,612 vehicles registered in Tasmania on 30 June 2021, 24.3 % were diesel powered.

Smoky vehicles program

The Department of State Growth maintains a strong focus on road safety and does 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 does not possess vehicle emission measurement facilities, and does 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 administers the National Heavy Vehicle Accreditation Scheme (previously performed individually by jurisdictions). Heavy Vehicle Maintenance Management Accreditation is one module within this scheme that encourages heavy vehicle operators to take more responsibility for maintaining their vehicles correctly and ensuring that they are always in good mechanical condition, compliant with relevant vehicle standards and operating efficiently. Fuel quality and fault repair activity standards apply in this module. Scheduled compliance audits and triggered audits are requirements of this accreditation.

Diesel vehicle retrofit programs

Statistics are not compiled on diesel vehicle retrofitting.

Other programs

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

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for the Australian Capital Territory by Ms Rebecca Vassarotti MLA, Minister for the Environment, for the reporting year ended 30 June 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The 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, 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, the Transport Canberra and City Services Directorate (TCCS) took delivery of five Euro VI diesel buses in 2020–21 replacing five aged non-Euro compliant diesel buses. The number of Euro VI buses in the TC fleet stands at 172. In addition, 70 CNG buses purchased between 2004 and 2008 remain in the fleet. There are a total of 385 diesel buses in the TCCS fleet.

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 2021.

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 67,048 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 26 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, 70 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 40 per cent of all registered vehicles are diesels, which is lower than in Alice Springs where diesels represent 43 per cent of the total vehicle fleet. In Katherine and Tennant Creek the diesel portion of the total fleet is 59 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, 19 per cent in Alice Springs and 11 per cent in Katherine. The distribution of light diesel vehicle registrations in the Territory differs slightly, with 71 per cent of all light diesel vehicles registered in the Darwin region, 14 per cent in Alice Springs and eight 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 2021.

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 Action Plan's commitment to implement agreed national waste data, reporting and information-sharing improvements by 2022.
- Preparing the *Hazardous Waste in Australia 2021* 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 2019 reporting year).

For more information, see <https://www.dcceew.gov.au/environment/protection/hazardous-waste/reform>.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Not applicable for the Commonwealth.

New South Wales

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure for New South Wales by the Hon Matt Kean MP, Minister for Energy and Environment, for the reporting year ended 30 June 2021.

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. 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. In response NSW is currently leading the establishment of a nationally consistent waste tracking and data system which will improve the quality of data and give better oversight of waste movements in and between jurisdictions. Improved information sharing, accessibility and transparency may prevent such incidents, and will assist in NSW's strategic infrastructure planning and the identification of critical waste infrastructure needs.

The *NSW Waste and Sustainable Materials Strategy 2041* (www.dpie.nsw.gov.au/our-work/environment-energy-and-science/waste-and-sustainable-materials-strategy) outlines the actions NSW will take over the next six years, the first phase of the strategy, to transition to a circular economy, 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:

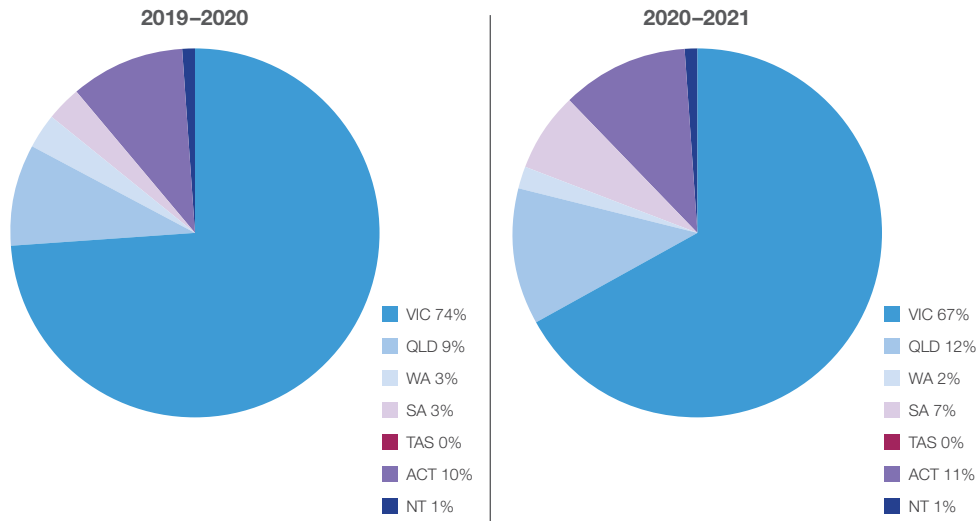
To provide a basis for ensuring that controlled wastes which are to be moved between States and Territories are properly identified, transported, and otherwise handled in ways which are consistent with environmentally sound practices for the management of these wastes.

In 2020–21, a total of 82,468 tonnes of controlled waste in 4,727 movements was reported as having been transported into NSW from interstate (Tables 2 and 4). This is a 3 per cent decrease on the 85,270 tonnes moved in 2019–20 and a 14 per cent decrease on the 5,518 waste movements that occurred in 2019–20. This compares to the reported 29 per cent increase in controlled waste tonnage and 19 per cent decrease in waste movements from 2018–19 to 2019–20.

NSW received less waste in 2020–21 compared to 2019–20 from Victoria and Western Australia, and received more waste from Queensland, South Australia, Tasmania and the ACT.

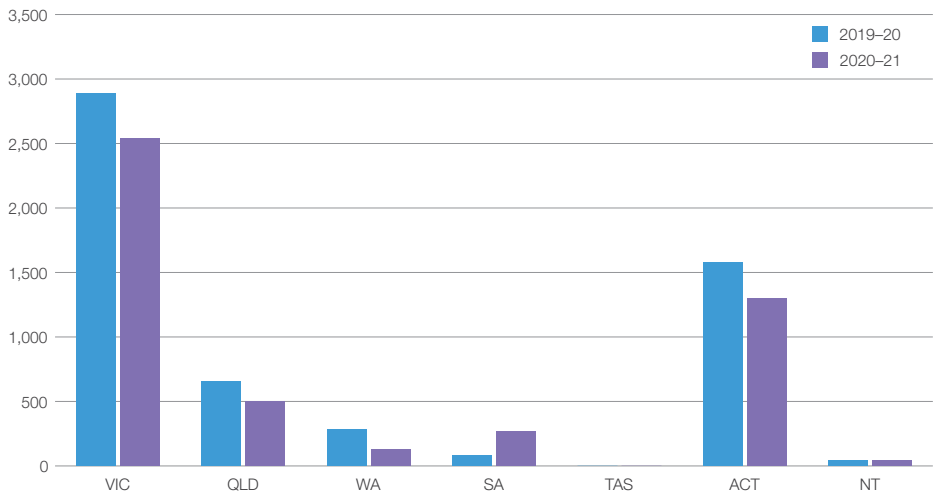
The greatest increase was from South Australia (3,364 tonnes, 152 per cent), followed by Queensland (2,146 tonnes, 28 per cent), Northern Territory (49 tonnes, 8 per cent) and ACT (375 tonnes, 4 per cent). The greatest decrease in waste was from Western Australia (928 tonnes, 32 per cent), followed by Victoria (7,720 tonnes, 12 per cent). Victoria's contribution to all waste transported into NSW decreased from 74 per cent to 67 per cent (Figures 1 and 2).

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



During the reporting period there were 791 less movements into NSW than during the 2018–2019 period; with Victoria accounting for the largest decrease (by 350) and South Australia the largest increase (by 171) (Figure 3).

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



Highlights by jurisdiction

Victoria: transport of acid waste decreased by 12 per cent to 21,324 tonnes. Inorganic chemical waste decreased by 62 per cent to 5,160 tonnes. Waste oil increased by 11 per cent to 20,960 tonnes. Clinical and pharmaceutical waste increased from 47 to 1,356 tonnes, while waste paints, resins, inks increased by 146 per cent from 886 to 1,292 tonnes.

Queensland: total quantity was up to 9,866 tonnes with inorganic chemicals increasing by 36 per cent from 5,685 to 7,745 tonnes. Alkalis increased from 161 to 588 tonnes, as did soil/sludge from 27 tonnes to 129 tonnes, and clinical and pharmaceutical from 218 tonnes to 254 tonnes. There was a decrease in paints, resins and inks from 450 tonnes to 160 tonnes, and organic chemicals from 334 tonnes to 262 tonnes.

Western Australia: total quantity was down for this state from 2862 to 1,934 tonnes, with inorganic chemicals decreasing 30 per cent to 1,860 tonnes. There was a decrease in oils from 175 to 36 tonnes.

South Australia: there was a significant increase in oils from 2,123 to 5,037 tonnes, and clinical and pharmaceutical waste from 0 to 419 tonnes.

Tasmania: no waste was recorded as transported to NSW.

ACT: there was a 49 per cent decrease in transport of oils from 3,082 to 1,577 tonnes. Putrescible/organic waste increased by 38 per cent from 4,643 to 6,397 tonnes.

Northern Territory: the total quantity of waste transported from the Northern Territory (total 685 tonnes) was similar to the previous reporting period (636 tonnes), with the main component being inorganic chemicals (636 tonnes).

Highlights by waste type

Oils: increased by 13 per cent from 24,970 in 2019–20 to 28,177 tonnes, with Victoria contributing the most (20,960 tonnes).

Acids: decreased by 12 per cent to 21,346 tonnes from 2019–2020, with Victoria contributing most (total 21,325 tonnes).

Inorganic chemicals: decreased by 32 per cent from 2019–20 to 15,523 tonnes. Victoria accounted for most of the decrease, down 62 per cent to 5,160 tonnes.

Clinical and pharmaceutical: increased significantly by 272 per cent from 2019–20 to 2,351 tonnes. The majority of the increase waste was from SA (418 tonnes) and Victoria (1,309 tonnes).

Paints, resins, inks, organic sludges: increased by 75 per cent from 2019–20 (1,498 tonnes) to 2,618 tonnes, with Victoria (2,178 tonnes) contributing to the majority of the increase.

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

Detailed data is provided in Tables 1–3. Note that with respect to Table 3, reliable discrepancy information is not currently available due to system constraints.

Table 1: Number of consignment authorisations issued by NSW for the movement of controlled waste into NSW for the period 1 July 2020 to 30 June 2021

Reporting Year	Consignment authorisations issued
2019–20	1,392
2020–21	1,359

Table 2: Quantity of controlled waste into NSW for the period 1 July 2020 to 30 June 2021
Tonnes per waste category by state/territory

Code	Description	VIC	QLD	WA	SA	TAS	ACT	NT	Total (T)
A	Plating & heat treatment	0.00	5.04	0.00	0.00	0.00	0.00	0.00	5.04
B	Acids	21,324.58	7.22	7.32	0.00	0.00	0.10	6.67	21,345.89
C	Alkalis	384.37	587.85	0.00	0.00	0.00	0.55	1.05	973.82
D	Inorganic chemicals	5,160.33	7,744.89	1,860.41	0.00	0.00	121.18	636.33	15,523.14
E	Reactive chemicals	5.02	2.10	0.00	0.00	0.00	0.13	0.00	7.25
F	Paints, resins, inks, organic sludges	2,177.72	159.78	0.00	9.84	0.00	265.50	4.93	2,617.77
G	Organic solvents	429.83	139.56	0.56	27.33	0.00	15.15	0.00	612.43
H	Pesticides	10.76	0.08	0.00	0.00	0.00	0.01	0.00	10.85
J	Oils	20,960.44	532.28	35.63	5,037.39	0.00	1,577.11	33.73	28,176.58
K	Putrescible/ organic waste	2,520.51	5.28	0.00	0.00	0.00	6,397.55	0.00	8,923.34
L	Industrial washwater	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
M	Organic chemicals	301.69	262.04	7.00	40.57	0.00	3.84	2.09	617.23
N	Soil / sludge	356.02	129.17	15.80	47.40	0.00	168.52	0.26	717.17
R	Clinical & pharmaceutical	1,355.55	254.41	7.54	418.66	0.00	314.36	0.00	2,350.52
T	Misc	264.41	36.42	0.00	0.00	0.00	286.56	0.00	587.39
State Totals (tonnes)		55,251.22	9,866.07	1,934.25	5,581.17	0.00	9,150.54	685.05	82,468.42

N/R = not recorded under this category

Table 3: Discrepancies in movements of controlled waste into NSW for the period 1 July 2020 to 30 June 2021

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 2020 to 30 June 2021

NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext Terr*	Total
N/A	2,540	488	114	252	0	1,287	46	0	4,727

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 2021.

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 continues active discussions with EPA NSW.

Environment protection legislation was to be replaced on 1 July 2020. With the Covid 19 epidemic, the implementation was delayed for a year to avoid impost on the Victorian community. The new legislation and waste tracker system will be in operation from 1 July 2021.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

In the 2020–21 reporting period, Victoria issued 512 authorisations to move waste to another state or territory. This is a decrease of 19% approvals from the previous year. Most authorisations were for solvents sent to resource recovery, and PFAS and clinical waste sent to treatment.

The total amount of controlled waste that was brought into Victoria during the reporting year was 19011 tonnes.

N code wastes (soils) was the largest stream, accounting for 37% of the total volume in 2020–21.

Due to the continuing implementation of EPA's new integrated information management system and legislation, the data for discrepancies in movements of controlled waste into Victoria in 2020–21 (refer to table 3 below) remains unavailable at the time of reporting. EPA is on track for these to be available for 2020–22 reporting.

In 2020–21, interstate movement of waste was still conducted with paper certificates. EPA Victoria finalised the new electronic waste tracking system, introducing it to the waste industry prior to introduction on 1 July 2021. The new waste tracking system includes the movement of controlled waste into Victoria. Victoria will continue to share information and work with our counterparts in other states.

Table 1: Number of consignment authorisations issued by Victoria

Reporting Year	Consignment authorisations issued
2019–20	629
2020–21	512

**Table 2: Quantity of controlled waste into Victoria for the period 1 July 2020 to 30 June 2021
– Tonnes per waste category by State/Territory**

Code	Description	NSW	QLD	WA	SA	TAS	ACT	NT	Ext-Terr*	Total (tonnes)
A	Plating & heat treatment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B	Acids	195.88	0.65	2.27	36.74	0.00	0.00	0.00	0.00	235.53
C	Alkalis	61.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.73
D	Inorganic Chemicals	22.50	578.43	69.77	1,902.57	0.00	560.65	0.00	0.00	3,133.91
E	Reactive Chemicals	11.30	0.00	0.00	25.00	0.00	0.00	0.00	0.00	36.30
F	Paints, resins, inks organic sludges	544.41	2.76	44.10	28.00	0.00	0.00	0.00	0.00	619.26
G	Organic Solvents	756.68	0.98	115.42	125.00	0.00	0.00	0.00	0.00	998.08
H	Pesticides	47.37	0.00	9.00	0.00	0.00	0.00	0.00	0.00	56.37
J	Oils	448.46	389.60	33.00	46.60	0.00	0.00	15.78	0.00	933.43
K	Putrescible / organic waste	984.98	0.00	0.30	0.00	0.00	0.00	0.00	0.00	985.28
L	Industrial washwater	766.18	0.00	8.00	1,597.16	0.00	0.00	0.00	0.00	2,371.34
M	Organic Chemicals	757.34	37.35	0.00	11.18	0.00	0.00	15.38	0.00	821.24
N	Soil/Sludge	7,043.67	3.07	28.46	9.41	0.00	0.00	0.00	0.00	7,084.61
R	Clinical & pharmaceutical	80.76	6.58	5.59	7.38	0.00	0.00	0.00	42.52	142.83
T	Misc.	1,408.05	1.49	7.00	113.00	0.00	2.00	0.00	0.00	1,531.54
State Totals (tonnes)		13,129.31	1,020.90	322.89	3,902.03	0.00	562.65	31.16	42.52	19,011.46

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 2020–21 usually contained in table 3 remains unavailable at the time of reporting. EPA is on track for these to be available for 21/22 reporting.

**Table 4: Number of movements of controlled waste into Victoria for the period
1 July 2020 to 30 June 2021**

NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext Terr*
1420	N/A	209	206	341	0	18	18	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 Hon Meaghan Scanlon MP, Minister for Environment and the Great Barrier Reef, Minister for Science, and Youth Affairs, for the reporting year ended 30 June 2021.

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 2020–21 was 337, which is a 27.53% decrease from 2019–20 (465). This decrease in consignments was accompanied by a 13.5% decrease in the amount of controlled waste transported into Queensland from other Australian States and Territories to 53,184 tonnes.
- During 2020–21, the department's compliance efforts were focused on key departmental investigations and ensuring movement data for specific waste types was verified.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by Queensland

Reporting Year	Consignment authorisations issued
2019–20	465
2020–21	337

**Table 2: Quantity of controlled waste into Queensland for the period 1 July 2020 to 30 June 2021
– Tonnes per waste category by State/Territory**

Code	Description	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext-Terr	Total
A	Plating & heat treatment	0.78	0.29	N/A	0.00	0.00	0.00	0.00	0.00	0.00	1.07
B	Acids	203.61	0.00	N/A	0.00	0.00	0.00	0.00	0.40	0.00	204.01
C	Alkalis	100.57	0.00	N/A	0.00	0.00	0.00	0.00	2.47	0.00	103.04
D	Inorganic chemicals	1,189.14	0.00	N/A	0.00	0.00	0.00	0.00	291.11	0.00	1,480.25
E	Reactive chemicals	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F	Paints, resins, inks organic sludges	0.00	354.22	N/A	0.00	0.00	0.00	0.00	13.63	0.00	367.85
G	Organic solvents	537.36	0.00	N/A	0.00	170.00	0.00	0.00	77.50	0.00	784.86
H	Pesticides	107.79	0.00	N/A	0.00	80.40	0.00	0.00	0.00	0.00	188.19
J	Oils	28,254.08	172.00	N/A	0.00	0.00	0.00	0.00	1,712.89	0.00	30,138.97
K	Putrescible/ organic waste	3,941.79	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	3,941.79
L	Industrial washwater	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M	Organic chemicals	532.55	1,667.13	N/A	0.00	0.00	10.00	0.00	0.00	0.00	2,209.68
N	Soil/ sludge	5,917.80	3.07	N/A	0.00	0.00	0.00	0.00	0.00	0.00	5,920.87
R	Clinical & pharmaceutical	3,671.98	19.82	N/A	0.00	0.00	0.00	0.00	0.00	0.00	3,691.80
T	Misc	4,046.78	0.00	N/A	0.00	0.00	0.00	0.00	105.70	0.00	4,152.48
State Totals (tonnes)		48,504.23	2,216.53	N/A	N/A	250.40	10.00	0.00	2,203.70	0.00	53,184.86

**Table 3: Discrepancies in movements of controlled waste into Queensland for the period
1 July 2020 to 30 June 2021 – percentage of total movements**

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

**Table 4: Number of movements of controlled waste into Queensland for the period
1 July 2020 to 30 June 2021**

NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext Terr*
4919	110	N/A	0	9	1	0	86	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 Amber-Jade Sanderson MLA, Minister for Environment; Climate Action; Commerce, for the reporting year ended 30 June 2021.

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 amending the *Environmental Protection (Controlled Waste) Regulations 2004* following a review to ensure the Regulations are risk-based, streamlined and effective.
- The number of consignment authorisations issued by Western Australia during the 2020–21 reporting year for the movement of waste into the state increased significantly compared to 2019–20 (from seven to 22). This increase is due in part to a new waste facility becoming fully operational during the period as a Class IV secure landfill site and Class V intractable landfill site.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by Western Australia

Reporting year	Consignment authorisations issued
2019–20	7
2020–21	22

**Table 2: Quantity of controlled waste into Western Australia for the period
1 July 2020 to 30 June 2021 – 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	Alkalies	0.00	0.00	0.00	N/A	0.00	0.00	0.00	109.00	0.00	109.00
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	76.88	0.00	76.88
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	254.36	0.00	254.36
K	Putrescible/ organic waste	0.00	0.00	0.00	N/A	0.00	0.00	0.00	3.66	0.00	3.66
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	0.00	0.00	39.23	N/A	0.00	0.00	0.00	0.00	0.00	39.23
N	Soil/sludge	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
R	Clinical & pharmaceutical	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
T	Misc.	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
State Totals (tonnes)		0.00	0.00	39.23	N/A	0.00	0.00	0.00	443.89	0.00	483.12

Table 3: Discrepancies in movements of controlled waste into Western Australia for the period 1 July 2020 to 30 June 2021 – percentage of total movements

Discrepancy Type	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext Terr *
Consignment non-arrival				N/A					
Transport without authorisation				N/A					
Non-matching documentation				N/A					
Waste data				N/A					

N/A = not available/applicable

Table 4: Number of movements of controlled waste into Western Australia for the period 1 July 2020 to 30 June 2021

NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext Terr*
2			N/A				45	

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 2021.

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 2020, South Australia as chair of the Controlled Waste NEPM Implementation Working Group, held an Implementation Working Group meeting (online). This was 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 2020–21.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by South Australia

Reporting Year	Consignment authorisations issued
2019–20	205
2020–21	181

Table 2: Quantity of controlled waste into South Australia for the period 1 July 2020 to 30 June 2021 – Tonnes per waste category by State/Territory

Code	Description	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext-Terr*	Total (Tonnes)
A	Plating & heat treatment	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00
B	Acids	42.25	16.24	0.00	0.00	N/A	0.00	0.00	0.63	0.00	59.12
C	Alkalis	5.73	43.05	0.00	0.00	N/A	0.00	0.00	0.20	0.00	48.98
D	Inorganic chemicals	5227.06	205.12	0.00	17.78	N/A	177168.29	0.00	418.44	0.00	183036.68
E	Reactive chemicals	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.40	0.00	0.40
F	Paints, resins, inks organic sludges	1.84	281.06	0.00	0.00	N/A	0.00	0.00	2.60	0.00	285.50
G	Organic solvents	45.19	41.57	4.17	6.42	N/A	0.00	0.00	1.00	0.00	98.35
H	Pesticides	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.42	0.00	0.42
J	Oils	443.80	506.02	0.00	535.50	N/A	0.00	0.00	42.89	0.00	1528.21
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	36.45	40.14	0.00	0.00	N/A	0.00	0.00	0.62	0.00	77.21
N	Soil/sludge	10117.66	13867.34	0.00	216.68	N/A	0.00	0.00	8.03	0.00	24209.71
R	Clinical & pharmaceutical	0.00	23.14	0.00	818.358	N/A	28.66	0.00	0.00	0.00	51.80
T	Misc.	219.76	20227 units	0.00	0.00	N/A	0.00	0.00	2194.44	0.00	2414.20
State Totals (tonnes)		16139.74	15023.69	4.17	776.38	N/A	177196.95	0.00	2669.66	0.00	211810.57

Table 3: Discrepancies in movements of controlled waste into South Australia for the period 1 July 2020 to 30 June 2021 – percentage of total movements

Discrepancy Type	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext Terr *
Consignment non-arrival	41%	52%	92%	50%	N/A	50%	0%	76%	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 2020 to 30 June 2021

NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext Terr*
514	763	4	325	N/A	55	0	326	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 2021.

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.

Nil.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by Tasmania

Reporting Year	Consignment authorisations issued
2019–20	2
2020–21	2

Table 2: Quantity of controlled waste into Tasmania for the period 1 July 2020 to 30 June 2021 – 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	Alkalies	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 1 July 2020 to 30 June 2021 – 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 2020 to 30 June 2021

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 2021.

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 ACT.

The provisions of the NEPM are implemented through the *Environment Protection Act 1997* and the *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.

With one minor exception, all parties bound by the NEPM have complied with the NEPM's protocols and information reporting requirements. Regular contact has been maintained with other jurisdictions to ensure cooperative administration of the NEPM.

The one minor discrepancy in relation to movements during the reporting period was clinical waste coming into the ACT from Victoria during the first Covid 19 outbreak. While a valid consignment authorisation existed, no waste documentation was provided as the movement was coordinated by the National Coordination Mechanism. All subsequent movements were tracked.

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
2019–20	55
2020–21	58

Table 2: Quantity of controlled waste into ACT for the period 1 July 2020 to 30 June 2021
– 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	Alkalis	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00
D	Inorganic chemicals	2.19	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	2.19
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	385.70	15.00	31.20	0.00	0.00	0.00	N/A	0.00	0.00	431.9
K	Putrescible/ organic waste	44.10	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	44.1
L	Industrial wash water	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	76.56	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	76.56
R	Clinical & pharmaceutical	215.46	295.15	0.00	0.00	0.00	0.00	N/A	0.00	0.00	510.61
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)		724.01	310.15	31.2	0.00	0.00	0.00	N/A	0.00	0.00	1065.36

Table 3: Discrepancies in movements of controlled waste into ACT for the period 1 July 2020 to 30 June 2021 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%	3.6%	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 2020 to 30 June 2021

NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext Terr*
785	55	2	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 MLA, Minister for Environment, for the reporting year ended 30 June 2021.

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. The NEPM provides a consistent system for use in the Northern Territory when required. The Northern Territory implemented an online system in January 2021 for Consignment Authorisations and Waste Tracking Certificates allowing for more efficient waste tracking under the NEPM. Discrepancies in movements of controlled waste into the Territory for the period relate to errors in completing the paper-based waste transport certificates and small variations in weights received in the online system.

Table 1: Number of consignment authorisations issued by Northern Territory

Reporting Year	Consignment authorisations issued
2019–20	10
2020–21	13

Table 2: Quantity of controlled waste into Northern Territory for the period 1 July 2020 to 30 June 2021 – 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	14.50	687.10	0.00	0.00	0.00	N/A	0.00	701.60
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	14.50	687.10	0.00	0.00	0.00	N/A	0.00	701.60

Table 3: Discrepancies in movements of controlled waste into Northern Territory for the period 1 July 2020 to 30 June 2021 – percentage of total movements

Discrepancy Type	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext Terr *
Consignment non-arrival	0%	0%	0%	0%	0%	0%	0%	N/A	0%
Transport without authorisation	0%	0%	0%	0%	0%	0%	0%	N/A	0%
Non-matching documentation	0%	0%	0%	0%	0%	0%	0%	N/A	0%
Waste data	0%	0%	0%	26%	0%	0%	0%	N/A	0%

Table 4: Number of movements of controlled waste into Northern Territory for the period 1 July 2020 to 30 June 2021

NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Ext Terr*
0	0	1	22	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 2021.

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 2021, the Department of Agriculture, Water and the Environment published National Pollutant Inventory (NPI) data for 2019–20. This data details emissions from over 4000 industry facilities and represents the 22nd year of NPI publication of emissions from industry.

The Commonwealth fielded enquiries from industry in relation to reporting, 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 two meetings of the NPI Review Steering Committee, comprising senior officials from the states and territories, to provide oversight and direction for the review process.
- The Commonwealth acknowledges the valuable contribution of states and territories towards the review.
- The NPI Review Steering Committee agreed to complete the review in late 2021.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The Commonwealth published the 2019–20 National Pollutant Inventory (NPI) data on 31 March 2021. The number of facilities reporting to the NPI rose from 4,157 in 2018–19 to 4,261 in 2019–20.

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

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		
• 137,847 sessions on the NPI website (https://www.npi.gov.au/) • 6,560 views of the NPI dataset on data.gov.au (https://data.gov.au/data/dataset/npi)	• The number of user sessions decreased from 392,408 in the previous year. • Server configuration errors deterred a large number of people from accessing the NPI website. • 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 messages were sent in response to emails received in the NPI inbox.

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Industry		
• 4,261 reports for 2019–20. • 4,157 reports for 2018–19. • 203 new reporters. • No new sectors reporting. • No confidentiality claims submitted.	• Many industry users experienced compatibility problems with the NPI Online Reporting System. • 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 National Pollutant Inventory teams) and for support with reporting systems managed by the Commonwealth.
Government		
• 7 facilities from 2 different Commonwealth departments reported to the NPI for 2019–20.	The Department of the Agriculture, Water and the Environment used NPI data in the following ways: The Department of the Agriculture, Water and the Environment used NPI data in the following ways: • to inform the final Regulation Impact Statement and cost-benefit analysis on Australia's ratification of the Minamata Convention on Mercury. NPI data also informed an assessment of Australia's level of compliance with Minamata Convention obligations relating to emissions to air. • in the National Waste Report 2020 to estimate amounts of waste produced in mining and minerals processing in 2018–19. The Department of Industry, Science, Energy and Resources used 2018–19 NPI data to model emissions for short-lived climate forcers (atmospheric compounds that affect air quality and the climate) in the National Greenhouse Accounts. NPI data contributed to the Australian Government's national greenhouse gas reporting on emissions of black carbon, particulate matter $\leq 2.5\mu\text{m}$ ($\text{PM}_{2.5}$), particulate matter $\leq 10\mu\text{m}$ (PM_{10}), and sulfur dioxide.	• 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 Environment, for the reporting year ended 30 June 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The New South Wales Department of Planning, Industry and Environment (DPIE) and the Environment Protection Authority (EPA) implement 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 2019–20 reporting period. This is the most recent year for which facility reporting data has been finalised, provided by NSW to the Commonwealth and published.

DPIE conducts 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 25 new reporters in 2019–20. DPIE and the EPA undertake 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 by the EPA under the NSW *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		
924 reports for 2019–20 (compared to 923 reports for 2018–19). 25 new reporters in 2019–20. - No confidentiality claims submitted.	Training and support provided by DPIE to facility reporters has improved data quality and reduced costs to NPI facility reporters.	- During 2019–20, DPIE trained approximately 45 reporters by phone and online, including in use of the NPI online reporting system. - DPIE has received ongoing requests from industry for training and guidance material on transfers of NPI substances in waste streams.
Government		
924 desktop audits of reports.	- DPIE and the EPA 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.	- DPIE continues to utilise internal and inter-agency communications to inform DPIE and EPA staff about NPI data and emission estimation techniques. - Regular NPI officer meetings and communications facilitate information exchange and knowledge sharing between jurisdictions and seek to ensure a consistent 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 2021.

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 2020/21, 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 (postponed for 12 months due to COVID-19), 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.	

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Industry		
848 published and 20 lodged reports for 2019/20; 806 published and 7 lodged reports for 2018/19; 7 submitted reports for 2019/20 were withheld from publication; 1 additional submitted report for 2018/19 was returned to the reporter, but still remains as a draft; 59 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 2020/21 due to COVID-19 pandemic and EPA's transformation to new legislation, NPI information was provided to EPA operation officers as part of their licence compliance site visits and desk-top assessments. - Due to COVID-19 pandemic and lockdowns in metropolitan and regional Victoria, NPI reporters were offered a two-month extension for submitting their 2019/20 financial year reports.	95.8% of published 2019/20 reports were submitted on time, while 4.2% were late. - Further 20 reports for 2019/20 were submitted to EPA after the 2019/20 reports publication on 31/03/2021 and have not yet been published. 97.5% of published and lodged reports for 2019/20 were submitted online. - Several reporters refused to submit their 2019/20 NPI reports online because of the security concerns, related to old and weak encryption of the NPI Online Reporting System.
Government		
556 reports for 2019/20 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 Meaghan Scanlon, Minister for the Environment and the Great Barrier Reef and Minister for Science and Youth Affairs, for the reporting year ended 30 June 2021.

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 and investment in relevant IT infrastructure.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Reporting for the 2020–21 reporting period (table 1) incorporates data from the 2019–20 year which was received on 30 September 2020 and validated in the 2020–21 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 visits to the National Pollutant Inventory website was recorded by the Commonwealth.	• The Queensland Government continued to engage with the NPI review. • 9 news articles were circulated in the 2020–2021 year compared to 10 in the 2019–20 year.	• NPI emissions and transfer reports were published through the Australian Government Open Data portal www.data.gov.au
Industry		
• 888 reports for 2019–20 (861 published, 27 below threshold no emissions or transfers reported). • 893 reports received for 2018–19 (862 published, 31 below threshold with now emission or transfers reported).	• Issues with the NPI online reporting system and calculation tools continued. The Queensland Government developed its own Excel-based combustion calculation tools to support reporters.	• 52% of facility reports were subject to desktop evaluation. • In February 2021, the Queensland Government’s NPI team met with industry representatives at the Queensland Generators Environment Forum (QGEF) to discuss some of the issues and recommendations around NPI reporting by power stations.

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
• 23 new reporters. • No new sectors reporting. • No confidentiality claims submitted.		
Government		
• 454 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.	• The first iteration of the NPI PowerBi dashboard has been shared internally for use by departmental colleagues.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Western Australia by the Hon Amber-Jade Sanderson MLA, Minister for Environment; Climate Action; Commerce, for the reporting year ended 30 June 2021.

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.	- One query from student seeking advice on use of NPI data in environmental assessments - One query from ABC news for a story relating to locomotive emissions in Esperance.
Industry		
898 reports for 2019–20. 839 reports for 2018–19. 79 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 2019–20. - 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		
• 898 desktop audits. • 9 detailed 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 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In South Australia, the Environment Protection Authority implements the National Environment Protection (National Pollutant Inventory) Measure through the *Environment Protection (National Pollutant Inventory) Policy 2008*.
- South Australia has continued to be 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. While progress with the Review stalled in 2019–2020, the Steering Committee have focussed on finalising the NPI Review report. 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 South Australian Environment Protection Authority (SA EPA). Aggregated emissions data are required for reliable comparison with industry emissions, however program resourcing levels do not currently allow for the updating of aggregate emissions data (last done in South Australia in 2003).
- South Australia strongly supports the provision of a national NPI dataset 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. - Public enquiry received regarding progress with the NPI Review.	- Prompt responses are made when NPI data is requested. - Participated in the GovHack 2020 open data competition as a data mentor.
Industry		
491 reports for 2019–20. 489 reports for 2018–19. 13 new reporters. - No new sectors reporting. - No confidentiality claims submitted.	- Online reporting training has been well received by industry. - Industry has expressed concern that accessing the NPI website and online reporting system raises security concerns with modern browsers. - 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		
491 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, Minister for Environment, for the reporting year ended 30 June 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- Detailed air emissions inventory remains a priority for the Tasmanian EPA. Aggregated emissions data are required for comparison with industry emissions; however, program resourcing levels do not currently allow for the updating of aggregate emissions data.
- System administration presents an ongoing issue with reporters needing support to fulfill obligations in an accurate and timely manner.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

NPI data is used occasionally to support regulatory actions and decisions. There are concerns about the reliability and timeliness of the available data.

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 visits to the National Pollutant Inventory website was recorded by the Commonwealth.	• No feedback received.	• Community engagement has been limited due to the COVID-19 pandemic response and limited resources to support the program.
Industry		
• 109 reports for 2019–20. • 140 reports for 2018–19. • No new reporters. • 1 reactivated reporter. • No new sectors reporting. • No confidentiality claims submitted.	• Industry has reported difficulty understanding the reporting requirements.	• Resources have been used to improve reporting within the water and sewerage sector as key sector with discharges of nutrients. • Emitters who appear to report inaccurate data are being engaged to improve data quality.
Government		
• 109 desktop audits. • No on-site audits. • No regulatory actions.	• NPI data is used to support Assessment decisions relating to air emissions and community impacts. • The calculation of mass loads of nitrogen and phosphorus is being used to inform impacts on aquatic receiving environments.	• Participation in the Review of the NPI is critical to ensuring its longevity and utility in the future.

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for the Australian Capital Territory by Ms Rebecca Vassarotti MLA, Minister for the Environment, for the reporting year ended 30 June 2021.

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 (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 ACT.
- The National Pollutant Inventory (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		
• 20 reports for 2019–20. • 22 reports for 2018–19. • 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 program and how to use 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		
• 20 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 MLA, Minister for Environment, for the reporting year ended 30 June 2021.

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.	• The NT EPA website provides information on the NPI and has links to the NPI website.
Industry		
• 109 reports for 2019–20. • 109 reports for 2018–19. • 1 new reporter. • 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.

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Government		
• 22 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. • The Department of Infrastructure Planning and Logistics (DIPL) is using NPI data to assist in compiling an emissions inventory for the development of a Darwin Airshed model.	• 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 2021.

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 2021, there were 1,451 Covenant signatories, of which 1,429 (98.48 per cent) were compliant. Non-compliant signatories are removed from the register of Covenant signatories and referred to the relevant state or territory government for follow up under the NEPM in that jurisdiction.

To comply with the Covenant, brand owner signatories are required to take the following actions:

- within three months of becoming a Signatory, submit an action plan that sets out what the Signatory proposes to do to contribute to the Covenant's aim and meets the obligations published by APCO
- by 31 March each year, commencing in the financial year following the year in which a company becomes a Signatory, submit an annual report that outlines performance against all of the action plan commitments and meets the reporting obligations as published by APCO
- publish the action plan and annual reports on its website in a prominent and readily identifiable way
- make annual financial contributions in the form of membership fees payable to APCO
- implement policies or procedures to buy products made from recycled materials
- establish collection and recycling programs for used packaging materials generated on-site
- take action, where appropriate, to reduce litter
- allow independent audits of annual reports and the implementation of action plans, including allowing access to relevant supporting documentation demonstrating application of the Sustainable Packaging Guidelines, or an alternative to the Guidelines, and
- assist APCO to respond to complaints from the public about the design and use of packaging materials.

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

Table 1: Number of covenant signatories by year

Reporting Year	Number of covenant signatories
2019–20	1,422
2020–21	1,451

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 2021.

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 its 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 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 5 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 have provided more than \$11 million for over 270 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 60,000 registered community reporters and has resulted in over 45,000 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. The 2019–20 National Litter Index Results show this target was 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 June 2021, the Minister for Energy and Environment announced the release of the NSW Waste and Sustainable Materials Strategy 2041 (the Strategy), accompanied by the NSW Plastics Action Plan (the Action Plan) and a guide to future infrastructure needs. Under the Strategy and the Action Plan, \$356 million will be invested over five years from 1 July 2022 into new programs and initiatives that minimise waste and value our resources while decarbonising our economy.

The Strategy outlines the NSW Government's approach to making the transition to a circular economy over the next 20 years. Through the Strategy, the NSW Government will:

- Work with local governments and industry to strategically plan for critical waste infrastructure, ensuring that future infrastructure capacity needs for residual waste and recycling are met
- Increase the uptake of recycled products through requiring NSW Government agencies to preference recycled content
- Help local governments to jointly procure waste services to get better value and waste outcomes for their local communities, and support investment in new waste infrastructure.

The Action Plan demonstrates the strong action Government is taking to reduce plastic waste and protect our environment. The plan outlines a comprehensive suite of actions to address plastic at all stages of its lifecycle, including:

- Phasing out single-use and other problematic and unnecessary plastics
- Providing funding to support innovative plastic recycling solutions, and
- Supporting plastics research with \$2 million towards a new Plastics Research Partnership.

Most notably, the Action Plan sets out the NSW Government's intention to make producers and brand owners more responsible for their packaging. Government will review industry's progress towards the national packaging targets in three years.

If industry has not taken sufficient action, the NSW Government will consider mandating targets or design standards to address the issues. The packaging industry may also be required to improve reporting to the NSW Government on its progress against the voluntary targets.

Finally, the NSW Government will level the playing field for packaging producers by requiring all eligible, non-Australian Packaging Covenant Organisation (APCO) member businesses to also meet the national targets. This will ensure businesses who are doing the right thing and working towards the national packaging targets are not unfairly disadvantaged by 'free riders'.

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 effective engagement approaches, to better engage with organisations on their obligations under the co-regulatory framework, and standardise national compliance.

Reporting Year	Number of covenant signatories (NSW)
2019–20	620
2020–21	635

During the 2020–21 financial year, no businesses were referred to the NSW Government by APCO for non-compliance with the NEPM. APCO’s regular audit of businesses with over \$50 million annual turnover is currently underway.

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.

Local Government Data

Local government data is available on the EPA’s website www.epa.nsw.gov.au/wastetools/surveys.htm

Victoria

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Victoria by the Hon Lily D'Ambrosio, Minister for Energy, Environment and Climate Change, for the reporting year ended 30 June 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The NEPM is implemented in Victoria through the Waste Management Policy (Used Packaging Materials) (WMP).

From 1 July 2021 the NEPM will be implemented in Victoria through the *Environment Protection Regulations 2021*.

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 2021, there were 1580 signatories to the Covenant nationally. Victoria has 568 signatories, making 36% of all signatories.

Table 1: Number of covenant signatories by year in Victoria

Reporting Year	Number of covenant signatories
2019–20	545
2020–21	568

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 information can be found (sourced from Sustainability Victoria) [Recycling and reducing waste | Sustainability Victoria \(https://www.sustainability.vic.gov.au/circular-economy-and-recycling\)](https://www.sustainability.vic.gov.au/circular-economy-and-recycling)

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Queensland by the Hon Meaghan Scanlon, Minister for the Environment and the Great Barrier Reef and Minister for Science and Youth Affairs, for the reporting year ended 30 June 2021.

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 2020–21 reporting year, the total number of brand owner signatories in Queensland increased by sixteen.

Table 1: Number of covenant signatories by year for Queensland

Reporting Year	Number of covenant signatories
2019–20	126
2020–21	142

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 2020–21 reporting period is available in the annual Recycling and Waste in Queensland Report 2020.

The Report was released on 30 July 2021 and is published at [Recycling and Waste in Queensland 2020 report \(www.qld.gov.au\)](https://www.qld.gov.au/recycling-waste-report)

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Western Australia by the Hon Amber-Jade Sanderson MLA, Minister for Environment; Climate Action; Commerce, for the reporting year ended 30 June 2021.

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 2020–21.

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
2020–21	101

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 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In 2020–21, South Australia continued to work with the Australian Packaging Covenant Organisation (APCO), the Commonwealth and other jurisdictions to pursue national consistency in the attainment of the goal of the NEPM.

The Environment Protection Authority (EPA) with the Government Officials Group (GOG) and APCO developed a Behaviour Change Program for brand owners under the NEPM including pursuing a consistent national approach when administering the NEPM.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

South Australia continues to work with GOG and 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 has focused on engaging with brand owners to achieve NEPM goals and desired environmental outcomes.

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

Reporting Year	Number of Covenant signatories
2019–20	83
2020–21	82

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 implementation of the Behaviour Change Program will provide a framework to manage brand owners that are not meeting their obligations under the NEPM by encouraging them to become signatories to the Covenant.

Supporting Data

The development of a national approach will provide a more effective way forward for pursuing 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 Behaviour Change Program for brand owners under the NEPM.

The objective of the program is to engage with South Australian brand owners who have still not become a member of the Covenant. In 2020 APCO identified an Industry Engagement Strategy for Tier 1 businesses (>\$50m turnover) to provide information about their options and the benefits of joining the Covenant through a joint APCO and EPA webinar for South Australian Tier 1 businesses.

Local Government Data

Available at [2020-21 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 December 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 2021.

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 {name of jurisdiction}

Reporting Year	Number of covenant signatories
2019–20	19
2020–21	17

Recovery Data

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

Supporting Data

No surveys completed during the reporting period.

Complaints, Investigations and Prosecutions

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

Statement of Interpretation of the Information

Not applicable.

Local Government Data

Year (reporting period): 1 July 2019—30 June 2020

Total number of Councils reporting: 21 of 29

Percentage of total Councils: 72.4% Total

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

Northern Tasmanian Waste Management Group—8 councils reported

Cradle Coast Waste Management Group – 4 councils reported

Southern Waste Strategy Authority – 8 councils reported

Independent Councils– 1 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	2
MGB 240L	Comingled recyclables	Fortnightly	12
MGB 140L & 240L options	Comingled recyclables	Fortnightly (for both options)	7

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 187,127
Non-Residential 44,496

Number of households/premises serviced by recycling collections:

Kerbside: Drop off (Optional):
Residential 177,903
Non-residential 5033

Average premises fee charged by Councils for recycling services:

Residential \$ 99.42 Non-residential \$ 111.32

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

Residential \$ 79.82 Non-residential \$ 82.53

Proportion of household/premises with access to a recycling service: 78%

Average participation rate: 85%

Table 1: Amounts of materials collected at the kerbside, sent for secondary use/energy recovery and contamination (waste) disposed of to landfill 1 July 2019—30 June 2020

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		13,762	
Total non packaging paper i.e. paper mixed, paper white office, newspaper and magazines		4,376	
Total glass		12,604	
Total plastics		2,652	
Total aluminium (cans)		366.79	
Total steel (cans, tins etc.)		742.11	
TOTAL	40,598	34,502	6,095.73

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

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for the Australian Capital Territory by Ms Rebecca Vassarotti MLA, Minister for the Environment, for the reporting year ended 30 June 2021.

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. The Waste Act provides the ACT Government with the powers to develop subordinate legislation relating to how waste is managed.
- In September 2020, the *Waste Management and Resource Recovery (Environment Protection – Used Packaging Materials) Code of Practice 2020* (the Code of Practice) came into force as a code of practice established under the Waste Act to give legislative force to the *National Environment Protection (Used Packaging Materials) Measure* in the ACT.
- The introduction of the Code of Practice meets the ACT's obligations under the *National Environmental Protection Council Act 1994*. The introduction of the Code of Practice allows the ACT Government to regulate non-compliant brand owners.
- To promote the implementation of the Code of Practice and raise awareness of the Brand Owners' responsibilities under the National Environment Protection Measure – Used Packaging Materials (UPM NEPM), the ACT Government, in conjunction with the Australian Packaging Covenant Organisation (APCO), held a joint webinar on 11 February 2021. This webinar outlined the co-regulatory framework of the Australian Packaging Covenant, the benefits of joining APCO and the steps brand owners must take if they choose to be regulated by the ACT.
- This webinar will be made available on the Transport Canberra and City Services Directorate (TCCS) website and remain available as a resource for brand owners seeking information about the UPM NEPM.
- The ACT Government participates in the Government Officials Group (GOG) and Behavioural Change and Compliance Processes working groups to improve the efficiency and simplicity of the administration of the UPM NEPM.
- As part of the work through the GOG, the ACT has participated in preparations for the APCO 2021 brand audit. The GOG has developed a series of letters to send to brand owners identified in the audit as potentially having obligations under the UPM NEPM. These letters will be sent to liable brand owners headquartered in the ACT who are identified during the audit.
- To help improve the efficacy of the UPM NEPM, the ACT Government has participated in the review of the UPM NEPM and Australian Packaging Covenant conducted by Matthews Pegg Consulting through face-to-face interviews with the consultants. The ACT is keen to participate in the next stages of the review throughout the next reporting period.
- The ACT has also taken significant steps to reduce plastic waste through the development of the *Plastic Reduction Act 2021*, which commenced on 1 July 2021. The legislation establishes a framework for phasing out problematic and unnecessary plastic. This legislation currently bans single-use plastic drink stirrers, cutlery and expanded polystyrene food and beverage containers, and further items will be considered for phasing out in future, including currently difficult to recycle plastic packaging.
- The ACT Container Deposit Scheme (CDS) continues to support the recovery of beverage containers in the ACT and reduce litter. The [Clean Up Australia 2020 Annual Report for the ACT \(https://irp-cdn.multiscreensite.com/ed061800/files/uploaded/2020%20ACT%20Fact%20Sheet.pdf\)](https://irp-cdn.multiscreensite.com/ed061800/files/uploaded/2020%20ACT%20Fact%20Sheet.pdf) showed a 12% reduction in litter items classified as 'packaging' in the ACT between 2020 and the previous reporting year.

PART 2— ASSESSMENT OF NEPM EFFECTIVENESS

Reporting Year	Number of covenant signatories
2019–20	8
2020–21	9

Recovery Data

During the 2020–21 reporting period, no brand owners have been referred to the ACT Government by APCO as non-compliant. There are no brand owners currently being regulated by the ACT under the Code of Practice. For this reason, no brand owner action plans have been submitted and no recovery data under clause 16 has been received.

Engagement with brand owners headquartered in the ACT is expected to increase after the 2021 brand owner audit has been completed by APCO.

Supporting Data

No retailer survey of packaged products was conducted in the ACT in 2020–21.

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 2020–21 with respect to the UPM NEPM.

Statement of Interpretation of the Information

In 2020–21 the ACT continued to work with the community and industry to encourage waste avoidance and increase recycling and resource recovery rates. Significant progress has been achieved through the implementation of the UPM NEPM via the introduction of the Code of Practice. Progress has also been achieved through participation in the process to engage with brand owners after the 2021 brand audit is complete.

Through complementary activities such as implementing the phase out of certain single-use and problematic plastic products through the *Plastic Reduction Act 2021* and the ongoing packaging recovery activities through the CDS, the ACT is achieving improved outcomes for the management of waste packaging.

Local Government Data

Data for the ACT will be provided on the TCCS website as it becomes available at www.tccs.act.gov.au.

Relevant data is published in TCCS annual reports though data for the 2020–21 reporting period is not yet available. The 2019–20 annual report is available at <https://www.cityservices.act.gov.au/about-us/annual-report>.

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 2021.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- 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

- There is one single brand-owner identified in the Northern Territory that would have obligations under the NEPM. There has been no reporting under clause 16 of the NEPM.
- Major contributors to the waste stream are brand-owners not based in the Northern Territory. Brand-owners who are signatories to the Australian Packaging Covenant 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.
- Of the 17 councils within the Northern Territory, only two provided kerbside recycling services – City of Darwin and Palmerston. Recycling activities in other areas face significant barriers and costs. Voluntary local drop-off recycling schemes are in place in a number of remote communities.
- The Container Deposit Scheme provides the most accurate and reliable indication of recovery and recycling of beverage containers in the NT.

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

Reporting Year	Number of covenant signatories
2019–20	1
2020–21	1

Recovery Data

A total of 140,119,195 approved beverage containers were sold in the Northern Territory during 2020–21. Of these, 101,559,554 containers were returned by a collection depot to a CDS coordinator. This equates to 72% of all containers sold that were returned, recycled and reused through the CDS, thereby diverted from landfill and litter. This decrease in return rate, down from 80% in 2019–20, is likely due to significantly increased sales in 2020–21, however overall remains a relatively high return rate.

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, 562 tonnes of cardboard and 172 tonnes of pallets were 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, 6366 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	708	76
PET	505	64
HDPE	24	25
Glass	5,077	85
LPB	47	44
Steel	2	33
other	3	0
Total	6,366	72

Complaints, Investigations and Prosecutions

Nil.

Statement of Interpretation of the Information

N/A.

Local Government Data

See above.



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