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

ELEVENTH ASSEMBLY

**NATIONAL ENVIRONMENT PROTECTION COUNCIL
ANNUAL REPORTS 2021-2022**

**Presented by
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Minister for Climate Change, Environment, Energy and Water
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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 develop and implement 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 Climate Change, Energy, the Environment and Water (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 appointed to the role of NEPC Executive Officer 16 June 2020 and remained in the role for the 2021–22 reporting year.

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 [2021–22 annual report](https://www.transparency.gov.au/publications/agriculture-water-and-the-environment/department-of-agriculture-water-and-the-environment/department-of-agriculture-water-and-the-environment-annual-report-2021-22) (<https://www.transparency.gov.au/publications/agriculture-water-and-the-environment/department-of-agriculture-water-and-the-environment/department-of-agriculture-water-and-the-environment-annual-report-2021-22>).

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—ASSESSMENT OF NEPM EFFECTIVENESS

The Air Toxics NEPM is implemented via a range of legislative, regulatory and administrative frameworks within each jurisdiction, and has a calendar year reporting requirement (2021). The NEPM continues to provide a nationally consistent framework for monitoring and reporting ambient levels of specified air toxics across diverse monitoring sites. Because monitoring to date has shown air toxics in Australia to be well below monitoring investigation levels, no jurisdiction engaged in any specific strategies or actions to manage them during the reporting year. There was also no new monitoring sites identified for stage 1 or stage 2 sites during the reporting period. For implementation activities refer to jurisdictional reports as provided in Appendix 1.

PART 3—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 at clause 17 of this 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—ASSESSMENT OF NEPM EFFECTIVENESS

The Ambient Air Quality NEPM is implemented via a range of legislative, regulatory and administrative frameworks within each jurisdiction, and has a calendar year reporting requirement (2021). During the reporting period the AAQ NEPM was amended to update the ambient air quality pollutant concentration standards for ozone, nitrogen dioxide and sulfur dioxide. The strengthened standards reflect increasing evidence regarding the impacts of air pollution on national mortality and morbidity outcomes, and a goal for continual improvement from 2025.

The NEPM continues to be valuable in the management and assessment of air quality in Australia, and monitoring results show that NEPM standards are mostly being met and that Australia's air quality is generally good compared with international standards. Meeting the NEPM standards for ozone and particulates remains a challenge for larger metropolitan areas in several jurisdictions, for example it is noted that in Sydney in summer there were a high level of ozone exceedance days. In several areas there was also insufficient data collected to demonstrate compliance with the NEPM, due in part to extended monitoring instrument outages.

For detail on implementation activities refer to jurisdictional reports as provided 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 found at the Federal Register of Legislation: <https://www.legislation.gov.au/F2008B00713/latest/text>.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The Assessment of Site Contamination NEPM continues to provide a consistent, science based, national methodology to guide professional practitioners in assessing site contamination. It is widely used across Australia by industry, site owners, and governments.

Jurisdictions noted it would be helpful for the NEPM to include updated technical guidance and standards, as well as emerging chemicals. Many noted the limited number of derived ecological investigation levels (EILs) adopted into the NEPM continues to present challenges. Jurisdictions have also raised that the incorporation of updated scientific knowledge and monitoring by appropriate qualified experts may require strengthening. Several of the reports acknowledge how this aligns with the objective to protect human and environmental health, with the next review of the NEPM noted as an opportunity to consider these issues.

For detailed implementation activities, please refer to jurisdictional reports as provided 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—ASSESSMENT OF NEPM EFFECTIVENESS

The Diesel Vehicle Emissions NEPM is implemented via a range of legislative, regulatory and administrative frameworks within each jurisdiction. The ACT and NT jurisdictions report that the NEPM is not applicable due to other legislative instruments in place. There also remain some limitations in quantifying the overall effectiveness of the NEPM, in part due to reported issues with either a lack of testing equipment, or equipment not meeting required standards. Despite this, the collection of data on diesel vehicle fleets and implemented programs to reduce diesel emissions across jurisdictions are in line with the goal of the NEPM, and it continues to be a useful part of the broader framework for managing vehicle emissions and general air quality.

National initiatives continue to contribute to progress toward the goal of the NEPM. For example, the National Clean Air Agreement (NCAA) 2021-2023 work plan includes 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.

For details of individual programs and initiatives, please refer to jurisdictional reports as listed 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 for this 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—ASSESSMENT OF NEPM EFFECTIVENESS

Jurisdictions reported that the NEPM continues to provide an effective means of tracking the interstate movement of controlled waste between states and territories.

The NEPM also continues to be an effective tool in minimising the potential for adverse impacts associated with the movement of controlled waste on human health and the environment. However, inconsistencies between jurisdictions (e.g. in terms of waste classification, waste codes, terminology) and outdated waste tracking systems introduce significant data uncertainty, and reporting in some areas is inconsistent.

Encouragingly there remains a high level of communication and cooperation between jurisdictions for this NEPM. For details of individual programs and initiatives, please refer to jurisdictional reports as listed in Appendix 5. The collated national data is available on request from the NEPC Secretariat:

nepc@dcceew.gov.au

PART 3—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

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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 for this 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—ASSESSMENT OF NEPM EFFECTIVENESS

Jurisdictions report that the NEPM continues to provide a valuable resource for national environment protection. In April 2022, the Commonwealth published the [National Pollutant Inventory review report 2021](https://www.dcceew.gov.au/sites/default/files/documents/npi-review-report-2021a.pdf) (<https://www.dcceew.gov.au/sites/default/files/documents/npi-review-report-2021a.pdf>). The review report made 7 recommendations including areas for further investigation and opportunities to improve the program to better meet the needs and expectations of communities, regulated businesses and government regulators. The review also affirmed the NPI was largely meeting its intended outcomes and goals and is recognised and valued for its utility and importance in providing an estimate of emissions and waste transfers from over 4000 Australian facilities.

Website and Public Awareness

The number of user sessions increased from 137,847 in the previous year to a total of 207,173 sessions. However, software errors in the NPI database frequently affected public users who searched on the data.

The use of the NPI database by non-government organisations and the media, often focusing on specific industry sectors or facilities, indicating improved contextual and interpretation of NPI data would facilitate better understanding within the community.

On-line reporting

After operating the NPI website on the www.npi.gov.au domain for over 23 years, the Commonwealth moved its NPI web pages, to become part of the website for the Department of Climate Change, Energy, the Environment and Water. The migrated NPI web pages went live on 1 July 2022 and are available here: [National Pollutant Inventory – DCCEEW](https://www.dcceew.gov.au/environment/protection/npi) (<https://www.dcceew.gov.au/environment/protection/npi>).

The adoption of stronger network security standards by modern web browsers and a lack of recent maintenance on the NPI Online Reporting System led to significantly disrupted access to the system for reporters and state and territory data administrators. The Commonwealth engaged IT experts to resolve the issue and restore system access. The Commonwealth acknowledges the extra efforts of states and territories during the disruption to complete their validation of the 2020–21 facility data in time for publication on 31 March 2022.

Industry facility reporting

The Commonwealth published the 2020–21 National Pollutant Inventory (NPI) data on 31 March 2022. The number of facilities reporting to the NPI rose from 4,306 in 2019–20 to 4,381 in 2020–21.

For details of individual activities please refer to jurisdictional reports as listed 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 for this 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—ASSESSMENT OF NEPM EFFECTIVENESS

The Used Packaging Materials (UPM) NEPM is implemented via a range of legislative, regulatory and administrative frameworks within each jurisdiction. During the reporting period an independent review of the NEPM and Australian Packaging Covenant was undertaken to evaluate the effectiveness of Australia's co-regulatory framework for packaging. The review was published in September 2021.

The review found that the co-regulatory arrangement was no longer fit-for-purpose to deliver a circular economy for packaging, making nine recommendations to address these limitations and assist governments and industry to develop a reformed packaging scheme. The report can be found at https://www.dcccew.gov.au/sites/default/files/documents/independent_review_of_the_upm_nepm_and_the_australian_packaging_covenant_-_final_report_-_september_2021.pdf. The Australian Government will consider the recommendations and respond in 2022.

As of 30 June 2022, there were 2,095¹ signatories to the Australian Packaging Covenant. This was an increase of 644 signatories (44 per cent) from the previous reporting period. Of these signatories, 1,422 had obligations to submit an action plan (of which 1,168 or 82.13 per cent were compliant) and an annual report (of which 1,358 or 95.5 per cent were compliant).

¹ Discrepancy in totals can be due to jurisdictional reporting intervals. Please refer to [APCO website](https://apco.org.au/) (<https://apco.org.au/>) for updated information on signatories.

Table 1: Covenant signatories on 30 June 2022, as reported by states and territories.

ACT	Not reported
NT	1
NSW	823
QLD	153
SA	109
TAS	20
VIC	791
WA	140
TOTAL	2037²

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.

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.

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.

During the reporting period jurisdictions continued to have brand owners referred as non-compliant or non-signatories to the covenant. Individual jurisdictions continue to work with brand owners to encourage engagement.

The NEPM sets out the information jurisdictions are required to report on. This information has been provided by jurisdictions in their individual reports listed in Appendix 7.

PART 3—REPORTING ON IMPLEMENTATION BY JURISDICTIONS

The annexes to this report are in Appendix 7:

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² Discrepancy in totals can be due to jurisdictional reporting intervals. Please refer to [APCO website \(https://apco.org.au/\)](https://apco.org.au/) for updated information on signatories.

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 2022.

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 monitoring and reporting 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. The Air Toxics NEPM was put in place to improve the information base regarding ambient air toxics within the Australian environment, with the aim of facilitating the development of standards. State and territory agencies are responsible for monitoring and reporting data.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Following inter-jurisdictional consultations reviewing the need for the Air Toxics NEPM in 2018 and 2019, it was agreed that the Air Toxics NEPM fulfils a useful role but would benefit from further work. The 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 Conran Review.

Other projects in the NCAA work plan which aim to reduce emissions of air toxics include the review of aromatics levels in petrol and a project to share information to reduce pollution from wood heaters.

Petrol contains numerous aromatics known or suspected to cause cancer, including benzene, xylene, toluene and polycyclic aromatic hydrocarbons, all of which are specified in the Air Toxics NEPM. Reducing levels of aromatics in Australian petrol will improve health outcomes, reducing levels of air toxics in vehicle exhaust. In 2021–22, the Department of Industry, Science, Energy and Resources completed a cost benefit analysis (CBA) on options to reduce aromatics in petrol. The Government is considering the outcomes of this CBA.

Similarly, the uptake of less polluting wood heaters and their responsible use will reduce the release of toxic volatile organic compounds from domestic wood heaters. Through the NCAA, an inter-jurisdictional wood heater Community of Practice has been established. The jurisdictions meet regularly to collaborate and share information on best practise management of wood heaters, including community education programs on the use of wood heaters and compliance with wood heater emissions and efficiency standard.

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. James Griffin MP, Minister for Environment and Heritage, for the reporting year ended 30 June 2022.

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 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 2021 and the Protection of the Environment Operations (General) Regulation 2022, provide the regulatory framework for action to address air emissions including managing air toxics in New South Wales.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Overview

New South Wales previously achieved the NEPM goal to estimate human exposure to the five NEPM air toxics using a consistent national framework, by conducting ambient monitoring at two Stage 2 monitoring sites in the Sydney metropolitan area in 2008 and 2009. The monitoring demonstrated that the five NEPM air toxics were well below the NEPM monitoring investigation levels that would trigger the NEPM requirement for ongoing ambient air toxics monitoring and no further monitoring has been required.

Reporting of monitoring of air toxics

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

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

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

NEPM-compliant sampling and analysis methods were used.

Tables 1 to 5 of the NSW implementation report for the reporting year ended 30 June 2010, 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 (<https://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: <https://webarchive.nla.gov.au/awa/20141215134000/http://www.scew.gov.au/resource/ephc-archive-nepc-annual-report-2009-10>.

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 Action and Solar Homes, for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The air toxics NEPM in Victoria is implemented by the Environment Protection Regulations 2021 and EPA's [Guideline for assessing and minimising air pollution \(https://www.epa.vic.gov.au/about-epa/publications/1961\)](https://www.epa.vic.gov.au/about-epa/publications/1961).

The regulations came into force on 1 July 2021, as subordinate legislation to the *Environment Protection Act 2017* which applied from the same date. The Guideline was published in February 2022 and provides a framework to assess and control risks associated with air pollution. It is a technical guideline for air pollution practitioners and specialists with a role managing pollution discharges to air.

With the introduction of the Act, environment protection law shifted to a prevention-based approach. Central to this approach is the general environment duty. This is a shared responsibility to prevent harm to the environment and means all Victorians must each take reasonable steps to stop harm, and do so before damage is done.

There were no implementation issues during the 2021 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 2021, no suitable sites were identified as being potential stage 1 and stage 2 sites for air toxics monitoring in Victoria.

Reporting of Monitoring of Air Toxics

During 2021, 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 2022.

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 2021 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 in Gladstone.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The AT 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 Springwood ambient air quality monitoring network site in South East Queensland (1999 to 2020) and in central Gladstone (2009 to present). 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's knowledge of ambient concentrations of most toxic air pollutants listed 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 2021–22 reporting period.

Identification of Sites

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

Reporting of Monitoring of Air Toxics

During 2021, ambient monitoring of benzene, toluene, xylenes and formaldehyde using DOAS instrumentation continued in Gladstone.

Monitoring results from the Gladstone monitoring site for the 2021 calendar year are provided in Table 1 below. These results indicate that levels of air toxics were well below the AT NEPM monitoring investigation levels.

Table 1: Monitoring Results

	Central Gladstone			
Air Toxic	Benzene	Toluene	Xylenes	Formaldehyde
Monitoring method	DOAS	DOAS	DOAS	DOAS
Period of monitoring	01/01/2021 to 31/12/2021	01/01/2021 to 31/12/2021	01/01/2021 to 31/12/2021	01/01/2021 to 31/12/2021
Number of valid results	301	350	347	363
Maximum 24-hour average concentration	0.0023 ppm	0.0075 ppm	0.0114 ppm	0.0060 ppm
Annual average concentration (as arithmetic mean)	0.0013 ppm	0.0016 ppm	0.0064 ppm	0.0042 ppm
Arithmetic Standard Deviation of 24-hour average concentrations	0.0004 ppm	0.0006 ppm	0.0012 ppm	0.0006 ppm
Number of times monitoring investigation level exceeded	0	0	0	0

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

From the monitoring results for the 2021 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 Department of Water and Environmental Regulation for the reporting year ended 30 June 2022.

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 *National Environment Protection Council (Western Australia) Act 1996* and the *Western Australian Environmental Protection Act 1986*.
- Air toxics emissions are also managed through the *Perth Air Quality Management Plan* (AQMP), a non-statutory mechanism established by the Western Australian Government.
- The objective of the AQMP is to ensure that clean air is achieved and maintained throughout the Perth metropolitan region.
- The AQMP identifies that, to achieve an overall improvement in Perth's air quality, 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 been extended during these campaigns. However, the monitoring results from these studies are invaluable when assessing ambient air toxic concentrations across Western Australia.

The most recent emissions inventory for the Perth metropolitan region (www.der.wa.gov.au/our-work/programs/460-perth-air-emissions-study-2011-2012) includes air toxics and provides additional information for identifying and prioritising air toxics sources in this area.

Identification of Sites

No sites have been identified.

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 2005–2010* technical report, which is available on the DWER website at <https://www.wa.gov.au/government/publications/background-air-quality-monitoring-kwinana-2005-10>. 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. Susan Close, Minister for Climate, Environment and Water, for the reporting year ended 30 June 2022.

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 Hon. Roger Jaensch, Hon. Roger Jaensch Minister for the Environment and Climate Change for the reporting year ended 30 June 2022.

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.
- 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 2022.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

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

Identification of Sites

In 2005, fourteen stage 2 sites were identified in a Desktop Analysis conducted in accord with the Air Toxics NEPM Desktop Analysis protocol.

Monitoring was conducted at 9 of these sites in the period 2008 to 2011. Some of the sites monitored were considered representative of other identified sites, in terms of land use (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 \(https://www.nepc.gov.au/sites/default/files/2022-09/nepc-annual-report-2011-12.pdf\)](https://www.nepc.gov.au/sites/default/files/2022-09/nepc-annual-report-2011-12.pdf).

Reporting of Monitoring of Air Toxics

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 2021–22 period. Consequently, the monitoring requirements for the Air Toxics NEPM must be evaluated as “not demonstrated” for the 2021 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

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 for the reporting year ended 30 June 2022

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 Minister for Environment, Climate Change and Water Security for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The Northern Territory Environment Protection Authority (NT EPA) is responsible for the implementation of the NEPM in the Northern Territory through the provisions of the *Waste Management and Pollution Control Act 1998* and the *National Environment Protection Council (Northern Territory) Act 1994*.
- The Northern Territory undertook a desktop study in 2005 to identify Stage 1 and Stage 2 sites for the purposes of meeting obligations under the NEPM. No Stage 2 sites were identified, and a long-term monitoring program has not been implemented.
- A nine-month monitoring program was completed in February 2006 to establish baseline conditions for Darwin. The results indicated that there are very low concentrations of benzene, toluene and xylenes, well below the investigation levels set by the NEPM.
- No further implementation activities were conducted in 2021–22.
- Reassessment of Stage 1 and Stage 2 sites may be required in the future, taking into account industrial development in the Darwin region such as the development of the Middle Arm Sustainable Development Precinct. According to NEPM guidance, reassessment was required by 2009, but the previous studies indicate that concentrations of air toxics are at very low levels, well below the monitoring investigation levels of the NEPM.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

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

In 2021–22, no sites were evaluated or selected, and no analyses were performed for NEPM reporting. Recent air toxics sampling in and around Darwin, undertaken by industries under their Environmental Protection Licences, indicate very low ambient levels of benzene, toluene and xylenes.

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 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The National Environment Protection (Ambient Air Quality) Measure (Ambient Air Quality NEPM) establishes national standards and a national framework for monitoring and reporting on six key air pollutants to which most Australians are exposed: carbon monoxide, nitrogen dioxide, photochemical oxidants (as ozone), sulfur dioxide, lead, and particles (as PM_{2.5} and PM₁₀).

States and territories are primarily responsible for managing ambient air quality in their jurisdictions. The Commonwealth is not required to undertake direct air quality monitoring under the Ambient Air Quality NEPM as there are no non-self-governing Commonwealth territories or Commonwealth areas with a population above the 25,000 protocol threshold.

Ambient air quality standards for ozone, nitrogen dioxide and sulfur dioxide were strengthened in April 2021. The strengthened standards reflect increasing evidence regarding the impacts of air pollution on national mortality and morbidity outcomes. At the same time environment ministers also agreed to schedule a further review of these standards commencing in 2025, noting that reviews of the PM_{2.5} and annual PM₁₀ particle standards are also planned for this time. This review will provide an opportunity to consider the Ambient Air Quality NEPM standards in line with latest available evidence, including the new air quality guidelines that were released by the World Health Organization in September 2021.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The data collected by jurisdictions for the pollutants listed in the Ambient Air Quality NEPM remains essential for monitoring Australia's ambient air quality and is also a valuable resource for informing actions under the National Clean Air Agreement (NCAA) and its work plan. The NCAA 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.

As part of the NCAA's third workplan (2021–23), work to evaluate options for a national approach to non-road diesel engine emissions through cost-benefit analysis is nearing completion. The report is likely to be released in the last quarter of 2022. Non-road diesel engine emissions are a significant unregulated source of air pollution in Australia, including of nitrogen dioxide and particles.

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. James Griffin MP, Minister for Environment and Heritage, for the reporting year ended 30 June 2022.

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 2021, the Protection of the Environment Operations (General) Regulation 2022 and the NSW Clean Air Strategy, 2021–30.

The POEO Act sets the statutory framework for managing air quality in NSW. The Protection of the Environment Operations (Clean Air) Regulation 2021 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 2022 establishes the licensing scheme for major industrial premises and economic incentives for licensed businesses and industry to reduce pollution, including emissions to air. The Clean Air Strategy presents a cohesive set of priorities and actions to support liveable communities, healthy environments and the NSW economy, by reducing the adverse effects of air pollution on NSW communities.

In NSW the Department of Planning and Environment (DPE) and the Environment Protection Authority (EPA) work together to reduce impacts of air pollution. DPE 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 improved air quality in 2021 (calendar year) compared to 2020, due primarily to cool and wet weather limiting bushfires and dust storms. While air quality varied regionally, fewer exceedance days were recorded in 2021 than in 2020 across all regions, and national standards were met for 93% to 100% of the year.

- Particulates (PM₁₀ and PM_{2.5}) were the primary cause of days over national standards in 2021, but annual averages for particles at most locations were the lowest levels seen in the past nine years. Particles as PM₁₀ and PM_{2.5} were above daily national standards on 18 days (observed at among 16 stations across the state) and 23 days (observed at among 23 stations) respectively.
- Elevated ozone was observed on five days when the 8-hour standard was exceeded. One of these five days was due to an exceptional cause (hazard reduction burning).
- There was one day in 2021 when a single 1-hour average sulfur dioxide (SO₂) level over the national standard was recorded.

Gaseous pollutants were assessed against newer, stringent NEPM goals and standards for 2021. For details, see: <https://www.environment.nsw.gov.au/topics/air/understanding-air-quality-data/standards-and-goals>.

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

DPE 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 2022 DPE operated 94 long-term monitoring stations in the NSW air quality monitoring network, which comprised several networks. Air quality data and information are made publicly available on the DPE 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 DPE website for the Sydney region. DPE 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 2021–22. Monitoring network data are presented for the calendar year 2021.

Clean Air Strategy 2021–30

The NSW Clean Air Strategy 2021–30 presents a whole of NSW Government approach to improving air quality and protecting communities and integrates air quality as a key component of other major initiatives. The strategy was released in February 2022 following public consultation in 2021. It presents a cohesive set of priorities and actions to support liveable communities, healthy environments and the NSW economy, by reducing the adverse effects of air pollution on NSW communities.

The strategy sets out actions under five priority areas where the biggest gains for air quality and health can be made: better preparedness for pollution events; cleaner industry; cleaner transport, engines and fuels; healthier households; and better places. More information on the strategy is available on the [DPE website \(https://www2.environment.nsw.gov.au/topics/air/clean-air-strategy#:~:text=The%20NSW%20Clean%20Air%20Strategy,air%20pollution%20on%20human%20health\)](https://www2.environment.nsw.gov.au/topics/air/clean-air-strategy#:~:text=The%20NSW%20Clean%20Air%20Strategy,air%20pollution%20on%20human%20health).

Air quality monitoring

In 2021 DPE's network of long-term air quality monitoring stations was retained, with no new stations added nor any existing ones removed. At 30 June 2022 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 stations.

The network provides detailed air quality information that is updated hourly and available on the recently established dedicated air quality website [Air quality New South Wales \(https://www.airquality.nsw.gov.au/\)](https://www.airquality.nsw.gov.au/). Further information about the network and current and historic data can also be found at: www.environment.nsw.gov.au/topics/air/monitoring-air-quality.

The NSW air quality monitoring plan describes how air quality monitoring in NSW ascribes to meet the objectives of the AAQ NEPM. It is available on the [Environment NSW website \(https://www.environment.nsw.gov.au/topics/air/monitoring-air-quality/review/nsw-air-quality-monitoring-plan\)](https://www.environment.nsw.gov.au/topics/air/monitoring-air-quality/review/nsw-air-quality-monitoring-plan).

Air emissions and health impacts research

Broken Hill Community Lead Monitoring Program

The Broken Hill community lead monitoring program continued from the four-year Broken Hill Environmental Lead Study which concluded in March 2020. From that time, a one-day-in-six sampling schedule continued at two locations. This was expanded in 2021 to four locations, to monitor against NEPM standards for lead in ambient air. Sampling in 2021 was interrupted for three months due to COVID-19 restrictions, and therefore the annual average cannot be determined against the NEPM standard. However, excluding the three-month lockdown, the averages across 2021 at the two stations operating in January 2021 were 0.11 µg/m³ and 0.05 µg/m³. These are well under the NEPM health standard of 0.50 µg/m³, but are higher than the level of 0.02 µg/m³ in the GMR measured in 2004, which was the last year of monitoring subsequent to the phase-out of leaded petrol. Further monitoring and analysis are underway to provide a better understanding of the sources and averages expected across Broken Hill.

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: <https://www.environment.nsw.gov.au/topics/air/research/current-research/sydney-air-quality-study>.

Stage 2 of the study showed that natural and human-made sources contributed 52% (3.36 $\mu\text{g}/\text{m}^3$) and 48% (3.07 $\mu\text{g}/\text{m}^3$) respectively to the population weighted annual average $\text{PM}_{2.5}$ concentrations (6.43 $\mu\text{g}/\text{m}^3$).

The study has also estimated the burden of mortality and its monetary value associated with long-term exposures to $\text{PM}_{2.5}$ from 11 emission scenarios in the NSW GMR. The total quantified impacts (costs) from different sources were valued around AUD (2021) \$4,000–\$5,000 million annually.

Over the GMR, the following anthropogenic sources are ranked from highest to lowest in terms of their impact on mortality and the associated economic cost from premature death or years of life lost: wood heaters, industry, on-road mobile (exhaust), power stations, domestic-commercial, non-road diesel and marine, and on-road mobile (non-exhaust). The corresponding costs based on years of life lost are AUD (2021) \$2,046, \$1,011, \$614, \$346, \$331, \$302, \$218 million respectively.

To better connect emissions and exposure to air pollution, further air quality studies will be undertaken using dynamic emission activity patterns and higher temporal resolutions.

Warringah Freeway Upgrade: Air Quality Monitoring

In early 2022 DPE established a monitoring station at Cammeray Park near North Sydney. This was commissioned on behalf of the EPA to monitor air quality around the Warringah Freeway Upgrade/ Western Harbour Tunnel over a two year period, starting before major construction and monitoring during construction. A network of indicative particle sensors from Wollstonecraft to Middle Harbour were also deployed. For more information see the EPA website here: <https://www.epa.nsw.gov.au/working-together/community-engagement/updates-on-issues/warringah-freeway-air-monitoring>.

Incident air quality monitoring in 2021–22

DPE conducted two incident monitoring campaigns on behalf of the EPA during 2021–22. In both cases, live data was available on the DPE website within days of deployment.

The first campaign was at Kurri Kurri in November 2021 to monitor air quality surrounding a multi-day factory fire near the town. DPE deployed a rapid response station at the local high school, as well as some low-cost indicative sensors in town. These were operated for a period of 10 days.

The second campaign was at Bowral between December 2021 and March 2022, to monitor air quality following complaints from residents regarding odours from a local waste facility. Additional monitoring was undertaken by low-cost indicative sensors, as well as hydrogen sulfide detectors deployed by 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. DPE 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 DPE is working towards more accurately forecasting air quality for greater Sydney and its sub-regions and will progressively expand 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 for NSW has been in operation, called HYSPLIT in NSW, which 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 on regional air quality from the unprecedented scale of wildfires. Continuous improvements are being made to this system in order to expand forecasting capabilities to include regions beyond the Sydney GMR, see: <https://www.environment.nsw.gov.au/topics/air/nsw-air-quality-statements/air-quality-special-statement-spring-summer-2019-20>.

To improve the accuracy of the forecasting system, DPE is developing and testing new methods based on artificial neural network models and machine learning.

Industry emissions

In 2021–22, 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 2021 and the Protection of the Environment Operations (General) Regulation 2022 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 2021–22, 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 2021–22 the EPA continued to regulate NSW coal fired power stations under the POEO Act, the Protection of the Environment Operations (Clean Air) Regulation 2021 and individual environment protection licenses which contain specific requirements for each facility. The EPA's public register (<https://www.epa.nsw.gov.au/licensing-and-regulation/public-registers>) contains information about each individual licence. 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 2021–22 DPE continued to administer the [NSW Government Resource Efficiency Policy](https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/sustainability-government/government-resource) (GREP). The GREP includes requirements to address non-road diesel engine emissions through government procurement and contracts.

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.

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 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 EPA issued the new rolling stock operator licences in 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. In 2021–22 the EPA continued to 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 NSW Government amended the POEO Act to include changes to the way road tunnel ventilation stacks are regulated. From March 2020 operators of motorway tunnel ventilation stacks were required to have environment protection licences. The licences place strict operating requirements on air emissions from ventilation stacks. The licences require air quality monitoring of tunnel ventilation stack emissions. Monitoring data is required to be made publicly available through tunnel operators' websites and provided to the EPA for review. In 2021–22 the EPA continued to regulate tunnel ventilation stacks under licences. The EPA undertook compliance activities such as monitoring reviews, site inspections and pollution studies to ensure ventilation stacks are operated according to 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 2021–22 financial year the EPA issued 675 advisory letters based on public reports, of which 566 advisory letters were to diesel vehicle owners. An average of 172 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, eight defective vehicle notices were issued in 2021–22 of which seven 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.

In 2021–22 the NSW Vapour Recovery Compliance Program continued to be implemented under the Protection of the Environment Operations (Clean Air) Regulation 2021 by local councils at service stations across the Sydney, Wollongong, Newcastle and Central Coast metropolitan areas, as well as the Lower Hunter and Illawarra Regions.

Implementation of vapour recovery at these service stations has reduced emissions of volatile organic compounds (VOCs) by an estimated 8,479 tonnes per year.

Summer low-volatility petrol

In 2021–22 the EPA continued to implement the summer low-volatility petrol program. 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 average 2,100 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 possible 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 harmonisation of national vehicle emission standards with Euro standards, together with tightening of fuel standards to enable adoption of control technologies to meet the tighter vehicle standards. Over 2021–22 NSW DPE continued to support early adoption of the Euro 6/VI emissions standards for diesel vehicles and enabling changes to fuel quality standards. In 2021 DPE staff represented NSW on the national Fuel Standards Consultative Committee.

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 2021–22 the EPA continued to provide 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 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 2021.

Hunter region coal mines dust management

Wetter weather conditions due to the La Nina climatic conditions helped manage dust emissions from coal mines during 2021–22. Because of the favourable weather conditions, targeted dust compliance campaigns were not conducted during the 2021–2022 spring and summer seasons. Individual regulation of coal mines continued as part of the EPA's risk based licencing inspection program.

Legislation

The Protection of the Environment Operations (Clean Air) Regulation 2010 was due for repeal on 1 September 2021. Given its age, size and technical complexity, and COVID-related delays, several postponements of the remake had been granted. The Regulation was remade on 27 August 2021 with minimal amendments to meet the 1 September 2021 deadline.

DPE and the EPA subsequently undertook a comprehensive review of the 2021 Regulation based on the latest environment and health research, current technologies, environmental practice and emission standards, as well as evolving community and stakeholder concerns.

A new draft Regulation was developed and the draft Regulation and associated regulatory impact statement were released for consultation from 6 May to 3 June 2022. There was significant public response to the consultation, with submissions from community, industry, environment and health groups and other stakeholders. DPE and the EPA are considering the submissions and based on the feedback may propose amendments to the Regulation for Government consideration.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Data in this section are presented for the 2021 calendar year. Data, for the full year, are reported against the standards in effect in 2021, registered on 26 May 2021.

The NSW air quality monitoring program is the largest in Australia, with a comprehensive monitoring network operated by DPE. As noted above, the NEPM network is a sub-set of the NSW air quality monitoring network operated by DPE. At 31 December 2021 the NSW NEPM reporting network comprised 39 air quality monitoring stations, compared with 36 in 2020.

Three stations were commissioned and incorporated into the AAQ NEPM network in the final quarter of 2020: Lidcombe in Sydney East, Penrith in North West Sydney, and Morisset in Lake Macquarie. The 39 NEPM stations comprised 19 in Sydney, one in the Central Coast, one at Lake Macquarie, three in the Illawarra, three in the Lower Hunter, three in the Upper Hunter and nine stations in regional NSW.

During 2021, NEPM goals were met for carbon monoxide and nitrogen dioxide, which remained well below relevant NEPM standards. The concentrations of sulfur dioxide, ozone, and particulate matter (as PM₁₀ and PM_{2.5}) were observed to be above national standards during 2021.

- For SO₂, one day was observed in 2021 when the 1-hr SO₂ standard (0.10 ppm) was exceeded, for one hour on that day, at Muswellbrook station (Upper Hunter).
- For ozone, five days were observed when the 8-hour ozone standard (0.065 ppm) was exceeded. Four days were due to non-exceptional causes, observed at 13 stations located in western Sydney.
- Particles as PM₁₀ and PM_{2.5} were above daily national standards on 18 days and 23 days (observed among 16 and 23 stations across the state) respectively. These include days impacted by both, exceptional and non-exceptional causes, and fewer days when compared with bushfire and dust-impacted record for 2020 (55 days and 59 days respectively). Collectively, there were 30 days when either one or both particle standards were exceeded during 2021.

All stations met the annual average NEPM goal for PM₁₀ and PM_{2.5}.

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. Monitoring for lead in Broken Hill is currently underway.

Detailed observed data and the compliance assessment with respect to the national standards follow in the next section. Current NSW programs targeting the primary emission sources of ozone and particle pollution are outlined in the previous section.

Gaseous pollutants

Sulfur dioxide

Sulfur dioxide was monitored at 24 stations in the NEPM network in 2021. One station did not have the required annual data coverage (75%) to determine compliance.

- Of the 23 stations with sufficient data to assess compliance, all met the daily national standard and goal for SO₂.
- For the 1-hour national standard for SO₂ (0.100 ppm), there was one day over the standard (0.123 ppm) at Muswellbrook in the Upper Hunter, observed at 9 am on 4 February 2021. The station met the daily goal for SO₂, recording its maximum daily SO₂ average (0.016 ppm) on 29 January 2021.

Morisset station in Lake Macquarie, while not exceeding any of the SO₂ standards, recorded the next highest 1-hour average SO₂ (0.071 ppm) on 15 December 2021. The station recorded its maximum daily SO₂ average (0.016 ppm), equivalent to Muswellbrook station's annual maximum, on 23 August 2021. This is the first time this station has been reported for NEPM compliance, and is located strategically between two coal-fired power stations.

Ozone

There were 29 stations in the NEPM network monitoring ozone for the full year during 2021. All met the 75% data availability requirement. Five additional regionally located stations were active only on a campaign basis and did not have sufficient annual data coverage (75%) to determine compliance.

Detailed compliance information is provided below, assessing observations against the ozone rolling 8-hour standard.

- The NEPM rolling 8-hour ozone standard was exceeded on five calendar days, observed across 14 Sydney stations.
- Four of five exceedance days occurred during warmer months, associated with typical ozone conducive weather conditions. Ozone forms most readily under conditions of increased temperature and when there is a daily build-up across Sydney region of precursor emissions including oxides of nitrogen (NO_x) and volatile organic compounds (VOCs).
- Emissions from vegetation burning such as during bushfires and jurisdiction authorised hazard reduction burning (HRB) are also a known source of ozone precursors and can contribute to ozone exceedances in NSW. The NEPM, as applied for the 2021 reporting year, differentiates the impact of jurisdiction authorised HRB on ozone as an exceptional event. In 2021, ozone was exceeded in association with a HRB on 9 October 2021, at Macquarie Park station in Sydney East region. This was deemed an exceptional ozone event.

In summary for 2021, the majority of the ozone exceedance days were deemed non-exceptional events, demonstrating that meeting the NEPM standards for ozone remains a challenge for Sydney in summer. The factors other than HRBs or bushfires that lead to exceedance events include elevated temperatures and high solar flux in summer, emissions of volatile organic compounds from all sources, nitrogen oxide emissions largely from industry or transport sources, and meteorological conditions which allow the concentrations of these to build up over the course of a day.

Particles

There were 30 days during 2021 when either one or both the daily particle standards were exceeded across the state. Many of these elevated particle days were due to exceptional causes (19 days), observed most frequently in the autumn months of April and May, when large parts of the Sydney region were impacted by hazard reduction burning.

Detailed compliance information is provided below, assessing observations against applicable daily and annual standards for particles as PM_{10} and $\text{PM}_{2.5}$.

Particles as PM_{10}

Thirty-nine stations in the NSW NEPM air quality monitoring network monitored PM_{10} levels in 2021, compared with 36 in 2020. Thirty-seven stations met 75% data availability, and two did not have the required data coverage for 2021 to determine compliance.

PM_{10} 24-hour standard and goal

There were 18 days with daily average PM_{10} levels over the national standard, observed at 16 stations across the state. This compares with 129 days in 2019, and 87 exceedance days in 2020.

Of the 18 days, events on eight days were attributed to non-exceptional causes only (local dust, regional dust, agricultural burning), while eight days were due only to exceptional causes (widespread dust and HRBs). Two days were identified where both, exceptional and non-exceptional causes impacted different stations on the same day.

Hazard reduction burning was the major cause for exceptional PM_{10} event days, observed across 9 western Sydney stations mostly during April and May (six days). With the non-exceptional events, major causes were regional dust and agricultural burning, mostly observed at Wagga Wagga North station (seven days) during January to April 2021.

With respect to the daily PM_{10} goal, of the 37 stations monitored, 33 met the 24-hour PM_{10} goal of zero exceedance after excluding exceptional events. Four stations did not meet the 24-hour PM_{10} goal, due to non-exceptional exceedance days: Rouse Hill and Liverpool (Sydney), Albury and Wagga Wagga North (regional NSW). Two stations, as previously stated, did not have sufficient data coverage.

- *Annual PM_{10} standard and goal*

All stations with sufficient data to assess compliance (37) recorded annual averages below the annual PM_{10} standard of $25.0 \mu\text{g}/\text{m}^3$, and therefore met the annual goal. The three highest annual averages were in the range $19.2 - 18.1 \mu\text{g}/\text{m}^3$ recorded at Newcastle, Muswellbrook and Liverpool. Annual standards are reported using all measured data, including exceptional events.

Particles as $PM_{2.5}$

Thirty-eight stations in the NSW NEPM air quality monitoring network monitored $PM_{2.5}$ levels in 2021. Thirty-six stations met 75% data availability; two stations did not have the required data coverage during 2021 to determine compliance.

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

There were 23 days with daily $PM_{2.5}$ average levels above the national standard in 2021, observed at 23 stations across the state. This compares with 116 days in 2019 and 59 days during 2020. Of the 23 exceedance days, events on 17 days were due to exceptional causes only (HRB), while five were attributed to non-exceptional causes only (woodsmoke, agricultural burning). One day was identified where both exceptional and non-exceptional causes impacted different stations on the same day.

The major cause for non-exceptional events was smoke generated by domestic wood heating, observed across two regional NSW stations: Armidale (Northern Tablelands) and Orange (Central Tablelands). It should be noted that in 2021, exceedances observed at Armidale (three days) was considerably lower than the three previous winters, which were all more than 20 days each. The reason for this is under investigation, believed at this stage to be due to the change in climatic conditions, as well as possibly reduced wood smoke emissions in Armidale. This will be monitored in future seasons.

Hazard reduction burning was the only cause for exceptional $PM_{2.5}$ events, and observed primarily at Sydney region stations.

With respect to the 24-hour $PM_{2.5}$ goal, 33 of 38 stations met the NEPM 24-hour $PM_{2.5}$ goal of zero exceedances excluding exceptional events. Three stations, all located in regional NSW, did not meet the goal due to non-exceptional causes: Armidale, Orange and Wagga Wagga North. Two stations, as previously stated, did not have sufficient data coverage.

- *$PM_{2.5}$ annual standard and goal*

All stations with sufficient data to assess compliance (36) recorded annual averages below the annual $PM_{2.5}$ standard ($8.0 \mu\text{g}/\text{m}^3$) and therefore met the annual goal. The three highest annual averages were in the range $7.9 - 7.3 \mu\text{g}/\text{m}^3$ recorded at Liverpool, Penrith, Albury, Muswellbrook and Macquarie Park.

Annual standards are reported using all measured data, including exceptional events. Most stations reported the lowest annual average for $PM_{2.5}$ for the last nine years. However, the NEPM standard for $PM_{2.5}$ annual average is scheduled to be reduced to $7 \mu\text{g}/\text{m}^3$ in 2025. The highest station readings in 2021 would not achieve this goal. As this goal cannot be reached in a year characterised by milder climatic conditions and the lowest readings for almost a decade, it shows that meeting these updated goals in 2025 may be challenging.

Monitoring data

Data from relevant monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goals were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. Note that to comply with the NEPM goals in effect since May 2021, no exceedances of any of the revised NEPM standards are allowed, for any averaging times.

An air quality monitoring station complies with NEPM goals for specific criteria pollutants on the criteria that at least 75% of 1-hour data are captured in each quarter of the year, and

- For the gases sulfur dioxide, carbon monoxide and nitrogen dioxide and particles as PM₁₀ and PM_{2.5}, if the NEPM standards (i.e., either hourly, rolling 8-hour, daily (24-hour), or annual as applicable) are not exceeded, and
 - For ozone, if the NEPM rolling 8-hour standard is exceeded only on days classified as exceptional events, where elevated levels relate directly to authorised hazard reduction burning or bushfires, or
 - For particles as PM₁₀ and PM_{2.5}, if the NEPM 24-hour standards are exceeded only on days classified as exceptional events (where elevated levels relate directly to continental windblown dust, authorised hazard reduction burning or bushfires). Additionally, if the NEPM annual standards are not exceeded, then particles are deemed to comply with the NEPM annual goal.

Hourly updated data from the total NSW air quality monitoring network are reported at www.dpie.nsw.gov.au/air-quality/current-air-quality, and www.airquality.nsw.gov.au. 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
Lidcombe	0	Met
Liverpool	0	Met
Macquarie Park	0	Met
Parramatta North	0	Met
Penrith	0	Met
Prospect	0	Met
Rouse Hill	0	Met
Rozelle	0	Met
Central Coast		
Wyong	0	Met
Lake Macquarie		
Morisset	0	Met
Illawarra		
Wollongong	0	Met
Lower Hunter		
Newcastle	0	Met

NO₂

Nitrogen Dioxide

(NEPM standards: 1-hour = 0.080ppm, 1 year = 0.015ppm)

Station	1-hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Sydney				
Bargo	0	Met	0.004	Met
Bringelly	0	Met	0.003	Met
Camden	0	Met	0.004	Met
Campbelltown West	0	Met	0.008	Met
Chullora	0	Met	0.009	Met
Cook and Phillip	0	Met	0.012	Met
Earlwood	0	Met	0.009	Met
Lidcombe	0	Met	0.009	Met
Liverpool	0	Met	0.010	Met
Macquarie Park	0	Met	0.004	Met
Oakdale	0	Met	0.001	Met
Parramatta North	0	Met	0.007	Met
Penrith	0	Met	0.005	Met
Prospect	0	Met	0.007	Met
Randwick	0	Met	0.005	Met
Richmond	0	Met	0.002	Met
Rouse Hill	0	Met	0.005	Met
Rozelle	0	Met	0.007	Met
St Marys	0	Met	0.004	Met
Central Coast				
Wyang	0	Met	0.003	Met
Lake Macquarie				
Morisset	0	Met	0.003	Met
Illawarra				
Albion Park South	0	Met	0.002	Met
Kembla Grange	0	Met	0.003	Met
Wollongong	0	Met	0.005	Met

Station	1-hour		1 year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Lower Hunter				
Beresfield	0	Met	0.006	Met
Newcastle	0	Met	0.005	Met
Wallsend	0	Met	0.005	Met
Upper Hunter				
Muswellbrook	0	Met	0.008	Met
Singleton	0	Met	0.005	Met
Regional NSW				
Goulburn	0	Met	0.003	Met
Gunnedah	0	Met	0.003	Met

O₃ Ozone

(NEPM standard: rolling 8-hour = 0.065ppm)

Station	Non-exceptional exceedance days*	Total exceedance days	NEPM goal compliance
Sydney			
Bargo	1	1	Not met
Bringelly	2	2	Not met
Camden	2	2	Not met
Campbelltown West	2	2	Not met
Chullora	1	1	Not met
Cook and Phillip	0	0	Met
Earlwood	0	0	Met
Lidcombe	1	1	Not met
Liverpool	2	2	Not met
Macquarie Park	0	1	Met
Oakdale	2	2	Not met
Parramatta North	2	2	Not met
Penrith	1	1	Not met
Prospect	2	2	Not met

Station	Non-exceptional exceedance days*	Total exceedance days	NEPM goal compliance
Randwick	0	0	Met
Richmond	1	1	Not met
Rouse Hill	1	1	Not met
Rozelle	0	0	Met
St Marys	0	0	Met
Central Coast			
Wyong	0	0	Met
Lake Macquarie			
Morisset	0	0	Met
Illawarra			
Albion Park South	0	0	Met
Kembla Grange	0	0	Met
Wollongong	0	0	Met
Lower Hunter			
Beresfield	0	0	Met
Newcastle	0	0	Met
Wallsend	0	0	Met
Regional NSW			
Goulburn	0	0	Met
Gunnedah	0	0	Met

* This represents all assessable days which are not due to an exceptional event. An exceptional event means a fire or dust occurrence that adversely affects air quality at a particular location that causes an exceedance of the standard that is in excess of normal historical fluctuations and background levels and is directly related to bushfire, jurisdiction authorised hazard reduction burning or continental scale windblown dust.

SO₂

Sulfur dioxide

(NEPM standards: 1 hour = 0.100ppm, 1 day = 0.020ppm)

Station	1 hour	NEPM goal compliance	1 day	NEPM goal compliance
	Number of exceedances		Number of exceedances	
Sydney				
Bargo	0	Met	0	Met
Bringelly	0	Met	0	Met
Campbelltown West	0	Met	0	Met
Chullora	0	Met	0	Met
Cook and Phillip	0	Met	0	Met
Lidcombe	0	Met	0	Met
Liverpool	0	Met	0	Met
Macquarie Park	0	Met	0	Met
Parramatta North	0	Met	0	Met
Penrith	0	Met	0	Met
Prospect	0	Met	0	Met
Randwick	0	Met	0	Met
Richmond	0	Met	0	Met
Rouse Hill	0	Met	0	Met
Rozelle	0	Met	0	Met
Central Coast				
Wyang*	0	ND	0	ND
Lake Macquarie				
Morisset	0	Met	0	Met
Illawarra				
Albion Park South	0	Met	0	Met
Wollongong	0	Met	0	Met
Lower Hunter				
Beresfield	0	Met	0	Met
Newcastle	0	Met	0	Met
Wallsend	0	Met	0	Met
Upper Hunter				
Muswellbrook	1	Not met	0	Met
Singleton	0	Met	0	Met

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

PM₁₀

Particles as PM₁₀
(NEPM standards: 1 day = 50.0 µg/m³, 1 year = 25.0 µg/m³)

Station	1 day			1 year	
	# Non-exceptional exceedance days	Total exceedance days	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Sydney					
Bargo	0	1	Met	11.8	Met
Bringelly	0	1	Met	15.3	Met
Camden	0	1	Met	13.0	Met
Campbelltown West	0	3	Met	13.8	Met
Chullora	0	0	Met	16.5	Met
Cook and Phillip*	0	0	ND	13.4	ND
Earlwood	0	0	Met	15.4	Met
Lidcombe	0	0	Met	15.7	Met
Liverpool	1	4	Not met	18.1	Met
Macquarie Park	0	2	Met	13.2	Met
Oakdale	0	1	Met	10.6	Met
Parramatta North	0	0	Met	17.1	Met
Penrith	0	2	Met	16.7	Met
Prospect	0	0	Met	17.2	Met
Randwick	0	0	Met	16.3	Met
Richmond	0	1	Met	13.6	Met
Rouse Hill	1	1	Not met	15.0	Met
Rozelle	0	1	Met	15.5	Met
St Marys	0	1	Met	16.2	Met
Central Coast					
Wyong	0	0	Met	13.5	Met
Lake Macquarie					
Morisset	0	0	Met	9.6	Met
Illawarra					
Albion Park South	0	0	Met	13.1	Met

Station	1 day			1 year	
	# Non-exceptional exceedance days	Total exceedance days	NEPM goal compliance	Annual average (µg/m³)	NEPM goal compliance
Kembla Grange	0	1	Met	17.6	Met
Wollongong	0	0	Met	15.1	Met
Lower Hunter					
Beresfield	0	0	Met	15.9	Met
Newcastle	0	0	Met	19.2	Met
Wallsend	0	0	Met	14.7	Met
Upper Hunter					
Aberdeen	0	0	Met	12.9	Met
Muswellbrook	0	0	Met	18.2	Met
Singleton	0	1	Met	17.5	Met
Central Tablelands					
Bathurst	0	0	Met	11.3	Met
Orange	0	0	Met	11.4	Met
North West Slopes					
Gunnedah	0	0	Met	11.2	Met
Narrabri*	0	0	ND	7.0	ND
Tamworth	0	0	Met	12.7	Met
Northern Tablelands					
Armidale	0	0	Met	10.4	Met
South West Slopes					
Albury	1	1	Not met	14.3	Met
Wagga Wagga North	7	7	Not met	17.7	Met
Southern Tablelands					
Goulburn	0	0	Met	9.2	Met

This represents all assessable days which are not due to an exceptional event. An exceptional event means a fire or dust occurrence that adversely affects air quality at a particular location that causes an exceedance of the standard that is in excess of normal historical fluctuations and background levels and is directly related to bushfire, jurisdiction authorised hazard reduction burning or continental scale windblown dust.

* 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), and any annual average reported should be taken as indicative only.

PM_{2.5}

Particles as PM_{2.5}
(NEPM standards: 1 day = 25.0 µg/m³, 1 year = 8.0 µg/m³)

Station	1 day			1 year	
	# Non-exceptional exceedance days	Total exceedance days	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Sydney					
Bargo	0	4	Met	5.3	Met
Bringelly	0	3	Met	7.2	Met
Camden	0	3	Met	6.1	Met
Campbelltown West	0	5	Met	6.3	Met
Chullora	0	6	Met	7.2	Met
Cook and Phillip*	0	1	ND	6.4	ND
Earlwood	0	3	Met	6.6	Met
Lidcombe	0	3	Met	6.1	Met
Liverpool	0	6	Met	7.9	Met
Macquarie Park	0	5	Met	7.3	Met
Oakdale	0	1	Met	4.5	Met
Parramatta North	0	3	Met	6.6	Met
Penrith	0	4	Met	7.9	Met
Prospect	0	2	Met	6.9	Met
Randwick	0	1	Met	6.4	Met
Richmond	0	4	Met	6.8	Met
Rouse Hill	0	4	Met	5.9	Met
Rozelle	0	3	Met	6.3	Met
St Marys	0	1	Met	5.8	Met
Illawarra					
Albion Park South	0	0	Met	4.8	Met
Kembla Grange	0	0	Met	5.1	Met
Wollongong	0	0	Met	5.7	Met
Central Coast					
Wyang	0	0	Met	4.7	Met

Station	1 day			1 year	
	# Non-exceptional exceedance days	Total exceedance days	NEPM goal compliance	Annual average (µg/m³)	NEPM goal compliance
Lake Macquarie					
Morisset	0	0	Met	3.9	Met
Lower Hunter					
Beresfield	0	0	Met	5.9	Met
Newcastle	0	0	Met	6.3	Met
Wallsend	0	0	Met	6.1	Met
Upper Hunter					
Muswellbrook	0	0	Met	7.3	Met
Singleton	0	0	Met	6.3	Met
Central Tablelands					
Bathurst	0	0	Met	5.1	Met
Orange	2	3	Not met	6.6	Met
North West Slopes					
Gunnedah	0	0	Met	6.5	Met
Narrabri*	0	0	ND	3.1	ND
Tamworth	0	0	Met	5.1	Met
Northern Tablelands					
Armidale	3	3	Not met	7.2	Met
South-west Slopes					
Albury	0	0	Met	7.3	Met
Wagga Wagga North	1	1	Not met	6.3	Met
Southern Tablelands					
Goulburn	0	1	Met	5.6	Met

This represents all assessable days which are not due to an exceptional event. An exceptional event means a fire or dust occurrence that adversely affects air quality at a particular location that causes an exceedance of the standard that is in excess of normal historical fluctuations and background levels and is directly related to bushfire, jurisdiction authorised hazard reduction burning or continental scale windblown dust.

* 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.

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 Action and Solar Homes, for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The ambient air quality NEPM in Victoria is implemented by the Environment Protection Regulations 2021 and EPA's [Guideline for assessing and minimising air pollution \(https://www.epa.vic.gov.au/about-epa/publications/1961\)](https://www.epa.vic.gov.au/about-epa/publications/1961) (the Guideline).

The regulations came into force on 1 July 2021, as subordinate legislation to the *Environment Protection Act 2017* which applied from the same date. The Guideline was published in February 2022 and provides a framework to assess and control risks associated with air pollution. It is a technical guideline for air pollution practitioners and specialists with a role managing pollution discharges to air.

With the introduction of the Act, environment protection law shifted to a prevention-based approach. Central to this approach is the *general environment duty*. This is a shared responsibility to prevent harm to the environment and means all Victorians must each take reasonable steps to stop harm and do so before damage is done. It applies to all Victorians.

- 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 Footscray in quarter 3 (Q3) 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 2 (Q2) and quarter 3 (Q3) due to instrumentation faults. Data capture was above 75% at all other stations.
- For carbon monoxide (CO), data capture was below the target of 75% at Footscray in quarter 3 (Q3) due to instrumentation faults. Data capture above the target of 75% at all other stations.
- For nitrogen dioxide (NO₂), data capture above the target of 75% at all stations.
- For ozone (O₃), data capture above the target of 75% at all stations.
- For sulfur dioxide (SO₂), data capture was below the target of 75% at Altona North in quarter 3 (Q3) and quarter 4 (Q4) due to instrumentation faults and Traralgon in quarter 4 (Q4) due to instrument faults. 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 2021 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} and PM₁₀ were exceeded. These exceedances were primarily due to landscape fires and wood heaters for PM_{2.5} and strong winds leading to raised dust for PM₁₀.

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.

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. There are no allowable exceedances for any of the standards.

An exceptional event rule may apply in the event of bushfires, jurisdiction-authorised hazard reduction burning, or continental scale windblown dust, meaning that during these exceptional events, levels of fine and coarse particulate matter as well as ozone that exceed the NEPM standard will be noted as exceedances but not counted as such for compliance purposes.

The data are presented in greater detail in the [Air monitoring report 2021: Compliance with the Ambient Air Quality National Environment Protection Measure | Environment Protection Authority Victoria \(https://www.epa.vic.gov.au/about-epa/publications/2052-nepm-compliance-air-monitoring-report\)](https://www.epa.vic.gov.au/about-epa/publications/2052-nepm-compliance-air-monitoring-report).

CO Carbon monoxide

(NEPM standard 8 hours = 9.0ppm)

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

* Data capture less than 75%

NO₂ Nitrogen Dioxide

(NEPM standard: 1 hour = 0.08ppm, 1 year = 0.015ppm)

Station	1 Hour		1 Year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Alphington	0	Met	7.8	Met
Footscray	0	Met	8.83	Met
Geelong South	0	Met	5.98	Met
Traralgon	0	Met	5.88	Met

O₃

Ozone

(NEPM standard: 8 hours = 0.065ppm)

Station	1 Hour		
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance
Alphington	0	0	Met
Dandenong	0	0	Met
Footscray	0	0	Not Met*
Geelong South	0	0	Met
Melton	0	0	Not Met*
Point Cook	0	0	Met
Traralgon	0	0	Not Met*

* Data capture less than 75%

SO₂

Sulfur dioxide

(NEPM standard: 1 hour = 0.10ppm, 1 day = 0.02ppm)

Station	1 hour		1 day	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Alphington	0	Met	0	Met
Altona North	0	Not Met*	0	Not Met*
Geelong South	0	Not Met*	0	Not Met*
Traralgon	0	Not Met*	0	Not Met*

* Data capture less than 75%

Pb

Lead

(NEPM standard: 1 year = 0.50µg/m³)

Not monitored in Victoria since 2004

PM₁₀

Particles as PM₁₀

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

Station	1 Day			1 Year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (mg/m ³)	NEPM goal compliance
Alphington	0	0	Not Met*	17.92	Not Met*
Dandenong	0	0	Met	17.96	Met
Footscray	1	0	Not Met*	18.65	Not Met*
Geelong South	2	0	Not Met	20.11	Not Met
Mooroolbark	0	0	Met	15.78	Met
Traralgon	0	0	Met	16.57	Met

* Data capture less than 75%

PM_{2.5}

Particles as PM_{2.5}

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

Station	1 Day			1 Year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (mg/m ³)	NEPM goal compliance
Alphington	3	0	Not Met	6.65	Met
Footscray	0	0	Not Met*	5.15	Met
Geelong South	0	0	Met	5.75	Met
Melbourne CBD	3	0	Not Met	6.28	Met
Traralgon	2	0	Not Met	7.24	Met

* Data capture less than 75%

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) 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 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- This report contains monitoring data from 1 January 2021 to 31 December 2021 and relevant events during the reporting year commencing 1 July 2021 and ending 30 June 2022.
- 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 2021–22 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 eighteen sites nominated in monitoring plan, and two additional reporting sites, were operational. Monitoring at three of the seven remaining sites concluded prior to 2021–22 due to completion of campaign monitoring.
- As part of a four-year program to provide Queensland communities with locally relevant air quality information during bushfire smoke exposure episodes, PM₁₀ and PM_{2.5} monitoring recommenced in Toowoomba in December 2021.
- Collection of PM_{2.5} data using Tapered Element Oscillating Microbalance (TEOM) instrumentation with Filter Dynamics Measurement System (FDMS) continued at three stations in South East Queensland (Rocklea, Springwood and Southport) and one station in Gladstone (South Gladstone) during 2021.
- Collection of PM_{2.5} data using Teledyne Advanced Pollution Instrumentation (TAPI) T640X optical particle spectrometers continued at Townsville (North Ward) and Mackay (West Mackay), and commenced at two stations in South East Queensland (Mountain Creek and Flinders View) and in Mount Isa (The Gap), during 2021.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

- The results of Queensland’s ambient air quality monitoring in 2021 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 and one-day sulfur dioxide concentrations in Mount Isa due to industry emissions, and one-day PM₁₀ concentrations in Mount Isa due to local dust generating activities.
- 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 one-hour and one-day standards is unlikely to be achieved. The smelter operator’s current Environmental Authority (EA), issued in 2015, permits one-hour and one-day average sulfur dioxide concentrations in excess of the AAQ NEPM standards. As a result, the AAQ NEPM sulfur dioxide one-hour standard was exceeded on 48 days, and the one-day standard on 33 days, at The Gap monitoring site in Mount Isa during 2021 due to industrial emissions.
- There was a total of eight exceedances of the AAQ NEPM PM₁₀ one-day standard (the numerical threshold) across Queensland performance monitoring stations during 2021. All but one of these exceedances were directly attributable to an exceptional event (region-wide windblown dust or bushfire smoke) and, as such, were excluded from the determination of compliance with the one-day AAQ NEPM goal. The remaining one-day PM₁₀ exceedance occurred at The Gap station in Mount Isa and was the result of local dust generating activities.

- There were two exceedances of the AAQ NEPM PM_{2.5} one-day standard (the numerical threshold) across Queensland performance monitoring stations during 2021. Both exceedances were directly attributable to an exceptional event (bushfire smoke) and, as such, were excluded from the determination of compliance with the one-day AAQ NEPM goal.
- Valid assessment of compliance with the standards and goals for nitrogen dioxide at South Gladstone and sulfur dioxide at Springwood in South East Queensland was not possible due to low data availability in one quarter as a result of extended monitoring instrument outages. With PM_{2.5} monitoring not commencing at Mountain Creek and Flinders View in South East Queensland and at The Gap in Mount Isa until part-way through 2021, data availability at these stations was insufficient to conduct a valid assessment of compliance with the standards and goal for PM_{2.5}.

Data from relevant monitoring stations are presented in tabular form below to enable an evaluation of whether the NEPM standards and goal were met at each monitoring station. The standards, with accompanying definitions and explanations, appear in Schedule 2 of the NEPM. There are no allowable exceedances for any of the standards.

An exceptional event rule may apply in the event of bushfires, jurisdiction-authorised hazard reduction burning, or continental scale windblown dust, meaning that during these exceptional events, levels of fine and coarse particulate matter as well as ozone that exceed the NEPM standard will be noted as exceedances but not counted as such for compliance purposes.

The data are presented in greater detail in the Queensland 2021 air monitoring report available at <https://www.qld.gov.au/environment/management/monitoring/air/air-reports>.

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

CO Carbon monoxide

(NEPM standard 8 hours = 9.0ppm)

Station	Number of exceedances	NEPM goal compliance
South East Queensland		
Woolloongabba	0	met
Gladstone		
Boyne Island	0	met

NO₂

Nitrogen Dioxide

(NEPM standard: 1 hour = 0.08ppm, 1 year = 0.015ppm)

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	0.005	met
Rocklea	0	met	0.006	met
Springwood	0	met	0.005	met
Southport	0	met	0.004	met
Flinders View	0	met	0.006	met
Gladstone				
South Gladstone	0	not demonstrated ^a	0.005	not demonstrated ^a
Townsville				
North Ward	0	met	0.003	met

^a not demonstrated due to insufficient data (i.e. less than 75 per cent) due to an extended monitoring instrument outage in Quarter 4.

O₃

Ozone

(NEPM standard: 8 hours = 0.065ppm)

Station	1 Hour		
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance
South East Queensland			
Mountain Creek	0	0	met
Deception Bay	0	0	met
Rocklea	0	0	met
Springwood	0	0	met
Southport	0	0	met
Flinders View	0	0	met

SO₂ Sulfur dioxide

(NEPM standard: 1 hour = 0.10ppm, 1 day = 0.02ppm)

Station	1 Hour		1 Day	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
South East Queensland				
Springwood	0	not demonstrated ^a	0	not demonstrated ^a
Flinders View	0	met	0	met
Gladstone				
South Gladstone	0	met	0	met
Townsville				
North Ward	0	met	0	met
Mount Isa				
The Gap	48	not met	33	not met

^a not demonstrated due to insufficient data (i.e. less than 75 per cent) due to an extended monitoring instrument outage in Quarter 3.

Pb Lead

(NEPM standard: 1 year = 0.50µg/m³)

Station	Annual average (µg/m ³)	NEPM goal compliance
Townsville		
Coast Guard	0.17	met
Mount Isa		
The Gap	0.12	met

PM₁₀

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

Station	1 Day			1 Year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (mg/m ³)	NEPM goal compliance
South East Queensland					
Mountain Creek‡	0	0	met	14.9	met
Rocklea+	0	0	met	10.1	met
Springwood+	0	0	met	10.6	met
Southport+	0	0	met	10.8	met
Flinders View‡	0	1*	met	14.5	met
Gladstone					
South Gladstone+	0	0	met	12.1	met
Mackay					
West Mackay‡	0	0	met	16.8	met
Townsville					
North Ward‡	0	1**	met	16.3	met
Mount Isa					
The Gap‡	1	5*	not met	18.4	met

* exceptional event exceedance due to regional windblown dust

** exceptional event due to bushfire smoke

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

‡ monitoring by TAPI T640X optical particle spectrometer.

PM_{2.5} Particles as PM_{2.5}

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

Station	1 Day			1 Year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (mg/m ³)	NEPM goal compliance
South East Queensland					
Mountain Creek [‡]	0	0	not demonstrated ^a	5.7	not demonstrated ^a
Rocklea ⁺	0	0	met	4.6	met
Springwood ⁺	0	0	met	4.8	met
Southport ⁺	0	0	met	4.6	met
Flinders View [‡]	0	0	not demonstrated ^a	5.9	not demonstrated ^a
Gladstone					
South Gladstone ⁺	0	0	met	5.0	met
Mackay					
West Mackay [‡]	0	0	met	5.7	met
Townsville					
North Ward [‡]	0	0	met	5.8	met
Mount Isa					
The Gap [‡]	0	2**	not demonstrated ^a	insufficient data	not demonstrated ^a

** exceptional event due to bushfire smoke

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

‡ monitoring by TAPI T640X optical particle spectrometer.

^a not demonstrated due to insufficient data (i.e. less than 75 per cent) in one or more quarters due to PM_{2.5} monitoring not commencing until part-way through 2021.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Western Australia by the Department of Water and Environmental Regulation for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In Western Australia, The National Environment Protection (Ambient Air Quality) Measure (NEPM) is implemented by the Department of Water and Environmental Regulation (DWER) under the *National Environment Protection Council (Western Australia) Act 1996* and the *Western Australian 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; and
 2. those activities within Western Australia (including regulatory activities) designed to ensure that air quality complies with the NEPM goal for each of the seven criteria pollutants.
- In the first category, DWER has:
 1. continued to liaise with local governments and other organisations as required to facilitate the establishment of ambient monitoring stations; and
 2. 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:
 1. 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 priority actions within the AQMP has commenced in addition to ongoing programs;
 2. continued to investigate and trial 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 air quality monitoring surveillance campaigns in sensitive receptor areas where air quality may be compromised and to increase our knowledge base on regional particle concentrations. These campaigns may use both regulatory and non-regulatory instruments such as LiDAR, RAPID and/or sensor technologies;
 3. maintained community access to the regularly updated air quality index via DWER's webpage (<https://www.der.wa.gov.au/your-environment/air/air-quality-index>);
 4. regulated emissions from industrial premises through works approvals and licences to control emissions of the criteria pollutants; and
 5. Taken responsibility for air quality monitoring in Port Hedland from industry.

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 2021 except for eight-hour average ozone at Rolling Green; daily average PM₁₀ at Busselton, Geraldton and Mandurah; and daily average PM_{2.5} at Armadale, Busselton, Caversham, Kalgoorlie, Quinns Rocks and South Lake. The annual average goal for PM₁₀ was met at all sites while the annual average goal for PM_{2.5} was not met at Busselton and Quinns Rocks.

The Mandurah (Peel Region) site is the closest station to the coast and had 17 exceedances of the daily PM₁₀ standard which were due to sea-salt from the ocean. While these exceedances are assessable according to the current classification, it is noted that marine aerosols are not harmful to human health.

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. There are no allowable exceedances for any pollutant.

An exceptional event rule may apply in the event of bushfires, jurisdiction-authorised hazard reduction burning, or continental scale windblown dust, meaning that during these exceptional events, levels of fine and coarse particulate matter as well as ozone that exceed the NEPM standard will be noted as exceedances but not counted as such for compliance purposes.

The data is presented in greater detail in the <https://www.wa.gov.au/government/publications/2021-western-australian-air-monitoring-report>.

The monitoring plan for Western Australia is available from: <https://www.wa.gov.au/system/files/2023-03/NEPM-for-ambient-air-quality-monitoring-plan-for-WA.pdf>.

CO

Carbon monoxide

(NEPM standard 8 hours = 9.0ppm)

Station	Number of exceedances	NEPM goal compliance
Caversham (North East Metro)	0	met
Duncraig (North Metro)	0	met
South Lake (South East Metro)	0	met
Mandurah (Peel region)	0	met
Kalgoorlie (Goldfields region)	0	met

NO₂

Nitrogen Dioxide

(NEPM standard: 1 hour = 0.08ppm, 1 year = 0.015ppm)

Station	1 Hour		1 Year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Caversham (North East Metro)	0	met	0.004	met
Duncraig (North Metro)	0	met	0.005	met
Quinns Rocks (Outer North Coast)	0	met	0.004	met
Rockingham (South Coast)	0	met	0.005	met
Rolling Green (Outer East Rural)	0	met	0.002	met
South Lake (South East Metro)	0	met	0.006	met
Swanbourne (Inner West Coast)	0	met	0.004	met
Mandurah (Peel region)	0	met	0.002	met

O₃ Ozone

(NEPM standard: 8 hours = 0.065ppm)

Station	8 Hour		
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance
Caversham (North East Metro)	0	1	met
Quinns Rocks (Outer North Coast)	0	1	met
Rockingham (South Coast)	0	0	met
Rolling Green (Outer East Rural)	1	0	not met
South Lake (South East Metro)	0	0	met
Swanbourne (Inner West Coast)	0	1	met
Mandurah (Peel region)	0	0	met

SO₂ Sulfur dioxide

(NEPM standard: 1 hour = 0.10ppm, 1 day = 0.02ppm)

Station	1 hour		1 day	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Rockingham (South Coast)	0	met	0	met
South Lake (South East Metro)	0	met	0	met
Wattleup (South Metro)	0	met	0	met
Kalgoorlie (Goldfields region)	0	not demonstrated	0	not demonstrated

Pb Lead

(NEPM standard: 1 year = 0.50i.g/m³)

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

PM₁₀

Particles as PM₁₀
(NEPM standard: 1 day = 50i.g/m³, 1 year = 25i.g/m³)

Station	1 Day			1 Year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Armadale (South East Metro)	0	2	met	11.9	met
Caversham (North East Metro)	0	3	met	13.2	met
Duncraig (North Metro)	0	2	met	13.2	met
Quinns Rocks (Outer North Coast)	0	0	met	17.2	met
South Lake (South East Metro)	0	1	met	14.5	met
Mandurah (Peel region)	17	2	not met	22.2	met
Albany (Southwest region)	0	0	met	14.3	met
Bunbury (Southwest region)	0	1	met	14.3	met
Busselton (Southwest region)	1	3	not met	15.2	met
Collie (Southwest region)	0	4	met	17.0	met
Geraldton (Midwest region)	5	1	not met	19.4	met
Kalgoorlie (Goldfields region)	0	0	met	11.3	met

PM_{2.5}

Particles as PM_{2.5}

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

Station	1 Day			1 Year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Armadale (South East Metro)	1	5	not met	6.2	met
Caversham (North East Metro)	2	4	not met	6.9	met
Duncraig (North Metro)	0	6	met	6.7	met
Quinns Rocks (Outer North Coast)	2	3	not met	9.7	not met
South Lake (South East Metro)	2	5	not met	7.6	met
Mandurah (Peel region)	0	3	met	6.7	met
Bunbury (Southwest region)	0	4	met	6.5	met
Busselton (Southwest region)	3	5	not met	8.4	not met
Collie (Southwest region)	0	1	met	5.4	met
Geraldton (Midwest region)	0	2	met	7.0	met
Kalgoorlie (Goldfields region)	2	0	not met	4.0	met

South Australia

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for South Australia by the Hon. Susan Close, Minister for Climate, Environment and Water, for the reporting year ended 30 June 2022.

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 Peer Review Committee (PRC) Technical Papers.
- A variation of the National Environment Protection (Ambient Air Quality) Measure was approved in April 2021 and took effect on 18 May 2021. The variation reduced the standard limits for ozone, nitrogen dioxide and sulfur dioxide to reflect the latest scientific evidence on health risks from these air pollutants.
- The revised standards for nitrogen dioxide and ozone were met at all sites.
- The reduced NEPM standards for sulfur dioxide were met in Adelaide, however implementation of these standards led to numerous exceedances of both the 1-hour and 1-day standards and goals at the Port Pirie monitoring site. Compliance with the previous SO₂ standards have been included for comparison.
- In 2021, dust storms in South Australia led to numerous PM₁₀ exceedances at monitoring sites in metropolitan Adelaide, Port Pirie and Whyalla.
- High data capture rates were achieved in 2021, with data availability for all quarters greater than 75% at all sites.
- 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.
- 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).
- The Mount Barker Wood Smoke Program commenced in April 2022 to assess the effects of wood heater smoke on air quality in Mount Barker. Results from the study will help inform evaluations of risk in other locations that have similar impacts, and future Wood Smoke Programs.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Data for South Australia shows that air quality was generally good during the 2021 calendar year.

In the Adelaide metropolitan region:

- Carbon monoxide – monitoring at the Adelaide CBD station showed concentrations were far below the NEPM standard. The data has not been included in the report as the station is not a NEPM site.
- Nitrogen dioxide – the 1-hour and 1-year standards and goals were met at all Adelaide monitoring stations.
- Ozone – the 8-hour standard and goal were met at all Adelaide monitoring stations.
- Sulfur dioxide – the 1- hour and 1-day standards and goals were met at North Haven monitoring station.
- Particles (PM₁₀)
 - The 1-day standard was met at all sites in the Adelaide metropolitan region, except Netley, with most exceedances attributed to exceptional events (dust storms). However, there were 4 exceedances at Netley that were due to dust from local sources including construction activity in the area.
 - The 1-year standard was met at all sites, except Netley due to dust from local sources and construction activity.
- Particles (PM_{2.5}) – the 1-day and 1-year standard and goals were met at both Netley and North Haven monitoring stations.

In the Spencer Region:

- Particles (PM₁₀)
 - The 1-day standard was not met at Port Pirie (Oliver Street) but was met at Whyalla (Schulz Reserve). Most exceedances were attributed to exceptional events as they were the result of dust storms. Two exceedances at Port Pirie were due to local sources including wind-blown dust.
 - The 1-year standard was met at both sites.
- Sulfur dioxide – the 1-hour and 1-day standards and goals were not 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. There are no allowable exceedances for any of the standards.

An exceptional event rule may apply in the event of bushfires, jurisdiction-authorised hazard reduction burning, or continental scale windblown dust, meaning that during these exceptional events, levels of fine and coarse particulate matter as well as ozone that exceed the NEPM standard will be noted as exceedances but not counted as such for compliance purposes.

The data are presented in greater detail in the Air Monitoring Report for South Australia 2021 – Compliance with the National Environment Protection (Ambient Air Quality) Measure available from https://www.epa.sa.gov.au/environmental_info/air_quality/reports_and_summaries/annual-air-quality-statement-2022.

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

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

- Hourly data
[Air quality monitoring | EPA \(https://www.epa.sa.gov.au/environmental_info/air_quality/new-air-quality-monitoring\)](https://www.epa.sa.gov.au/environmental_info/air_quality/new-air-quality-monitoring)
- Summary reports
[Reports | EPA \(https://www.epa.sa.gov.au/environmental_info/air_quality/reports_and_summaries\)](https://www.epa.sa.gov.au/environmental_info/air_quality/reports_and_summaries)
- Validated data
[Air Quality Monitoring Sites – Dataset – data.sa.gov.au](https://data.sa.gov.au/Air-Quality-Monitoring-Sites-Dataset)

NO₂

Nitrogen Dioxide

(NEPM standard: 1 hour = 0.08ppm, 1 year = 0.015ppm)

Station	1 Hour		1 Year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Adelaide				
CHD01 – Christie Downs	0	Met	0.005	Met
NET01 – Netley	0	Met	0.006	Met
NOR01 – Northfield	0	Met	0.005	Met
NHV01 – North Haven	0	Met	0.005	Met

O₃

Ozone

(NEPM standard: 8 hours = 0.065ppm)

Station	8 Hour		
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance
Adelaide			
CHD01 – Christie Downs	0	0	Met
NET01 – Netley	0	0	Met
NOR01 – Northfield	0	0	Met
NHV01 – North Haven	0	0	Met

SO₂

Sulfur dioxide

(NEPM standard: 1 hour = 0.10ppm, 1 day = 0.02ppm)

Station	1 hour		1 day	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Adelaide				
NHV01 – North Haven	0	Met	0	Met
Spencer				
PTP01 – Pt Pirie Oliver Street	56	Not Met	24	Not Met

(Previous NEPM standard: 1 hour = 0.20ppm, 1 day = 0.08ppm, 1 year = 0.02ppm, before 18 May 2021)

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	0.000	Met
Spencer						
PTP01 – Pt Pirie Oliver Street	3	Not Met	0	Met	0.006	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	0.15	Met
PTP05 – Pt Pirie Oliver Street	0.32	Met

PM₁₀

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

Station	1 Day			1 Year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (mg/m ³)	NEPM goal compliance
Adelaide					
CHD01 – Christie Downs	0	3	Met	14.8	Met
NET01 – Netley	4	4	Not Met	27.0	Not Met
NHV01 – North Haven	0	3	Met	14.9	Met
Spencer					
PTP01 – Pt Pirie Oliver Street	2	3	Not Met	20.6	Met
WHY07 – Whyalla Schulz Reserve	0	3	Met	17.0	Met

PM_{2.5}

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

Station	1 Day			1 Year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (mg/m ³)	NEPM goal compliance
Adelaide					
NET01 – Netley	0	0	Met	5.6	Met
NHV01 – North Haven	0	0	Met	5.0	Met

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Ambient Air Quality) Measure for Tasmania by Hon Roger Jaensch Minister for the Environment and Climate Change for the reporting year ended 30 June 2022.

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.
- 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 (Smoke) Regulations 2019* and the *Tasmanian Air Quality Strategy 2006*.
- The Air Policy includes specific reference to meeting the requirements of the Air NEPM through regulation of industry and management of diffuse sources like planned burning activities. The policy is available on the EPA Tasmania's website at <https://epa.tas.gov.au/environment/air>.
- 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*, were gazetted in August 2007 to provide a legal framework for programmes to reduce the emission of domestic wood smoke through controls on the import, sale, and installation of wood heaters. The regulations were revised and reissued on the 26th of June 2019 as the *Environmental Management and Pollution Control (Smoke) Regulations 2019*. The regulations continue to make the emission of excessive smoke from a residential chimney an offence. On-ground experience 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 Tasmania established a state-wide network of indicative level air monitoring stations referred to as the BLANKET (Base-Line Air Network of EPA Tasmania) network. In 2018–19 this network consisted of 34 fixed stations, including those co-located with the reference level stations at Hobart, Launceston, and Devonport. This network of optical particle monitors, calibrated against reference level instruments, provides real-time information for understanding smoke concentration, movement, and dispersal in the greater Tasmanian airshed. Air quality and meteorological data from the BLANKET network are published in near real-time on the EPA Tasmania 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 Tasmania's state-wide BLANKET network is used to facilitate an annual review process to increase the strategy's effectiveness. Monitoring data from the BLANKET network shows that the severity of planned burn smoke impacts has decreased since the implementation of the CSMS. Feedback from the users of the CSMS indicates that their ability to make more informed decisions concerning smoke movement and dispersion is facilitated by the BLANKET air quality monitoring network and the analyses carried out by the EPA Tasmania.

- In response to the growing understanding that poor winter-time air quality is widespread in many Tasmanian towns and urban areas, the *Domestic Smoke Management Program* (DSMP), an initiative of the 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 the EPA Tasmania and various Councils work together on the 'Burn Brighter this Winter' projects. The education and information campaign is backed up with air quality data from nearby BLANKET stations, mobile air quality monitoring and from smoky chimney surveys. These data enable appropriate information to be conveyed to specific households.
- Since winter 2016 small, indicative-quality air stations have been deployed in several residential backyards as part of work undertaken with local government supporting chimney-smoke complaint-resolution. The small stations, known as 'babyBLANKETs', are easily relocatable and are of low-cost. The data from these stations have at times assisted councils with their regulatory activities and importantly, provide a window into 'peak-residential' woodsmoke exposure. The local air quality has been found to be significantly degraded in some instances. However, quantitative data illustrating degraded air quality are not recognised as evidence of an offence under the *Environmental Management and Pollution Control (Smoke) Regulations 2019*, and in some cases no rectification action is taken.
- The Tasmanian reference level air monitoring programme operates under an ISO:17025 compliant Quality System and holds NATA accreditation for the daily measurement of $PM_{2.5}$ and PM_{10} using the reference instruments and methods prescribed in the Air NEPM.
- A reference level air monitoring station at Devonport was commissioned in December 2012. This station is equipped with gravimetric air samplers for reference measurements of daily averaged $PM_{2.5}$ and PM_{10} particulate concentrations, as well as two Tapered Element Oscillating Microbalances (TEOMs) to provide hourly-averaged $PM_{2.5}$ and PM_{10} data.
- A reference level peak carbon monoxide (CO) monitoring station was established in Macquarie Street, Hobart at the end of 2010. Regular monitoring commenced in February 2011 and continued until the stations was de-commissioned in February 2013. No exceedances of the NEPM standard for CO were recorded in this interval.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

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

- The Air NEPM has made a significant contribution to improved urban air quality in Tasmania, by raising community awareness of air quality issues and supporting programmes aimed at reducing wood smoke pollution during winter. This has been particularly effective in Launceston, where a combination of a reduction in the number of wood heaters, and improved community co-operation has reduced winter PM_{10} levels.
- Other ongoing programs to reduce the impacts of air pollution in Tasmania, driven at least in part by the Air NEPM and the associated air quality standards and goals, have been introduced in more recent years. These include the *Domestic Smoke Management Program* started in 2012 to address issues related to smoke from domestic wood heaters and the *Coordinated Smoke Management Strategy* established in 2009 to address issues related to smoke from planned burning activities.

Launceston

PM_{10}

- There were no exceedances of the 24-hour PM_{10} standard of $50 \mu\text{g}/\text{m}^3$ measured in Launceston in calendar year 2021. Data capture rates for the four quarters of 2021 were 97%, 92%, 100% and 100% respectively, giving an annual rate of 97%. The annual average PM_{10} was $15.8 \mu\text{g}/\text{m}^3$, which meets the annual PM_{10} standard of less than $25 \mu\text{g}/\text{m}^3$.

PM_{2.5}

- The 24-hour PM_{2.5} standard of 25 µg/m³ was exceeded on 6 days in Launceston in 2021. This is lower than results from recent years except for 2019 (11 in 2020, 4 in 2019, 10 in 2018; 16 in 2017, 9 in 2016, 12 in 2015, 11 in 2014, 12 in 2013, 16 in 2012; 6 in 2011; 11 in 2010; and 12 in 2009). Overall, the 2021 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 2021, of 6.6 µg/m³ meets the PM_{2.5} annual standard of less than 8 µg/m³, and is lower than annual averages from the past few years (7.6 µg/m³ in 2020, 7.6 µg/m³ in 2019, 7.9 µg/m³ in 2018, 8.6 µg/m³ in 2017, 7.8 µg/m³ in 2016; 8.7 in 2014; 8.1 µg/m³ in 2013; 8.4 µg/m³ in 2012; 7.5 µg/m³ in 2011; 8.3 µg/m³ in 2010; and 7.5 µg/m³ in 2009). Data capture rates by quarter were 98%, 97%, 99%, and 96%, giving an annual rate of 97%.

Hobart**PM₁₀**

- In Hobart in 2021 there were no exceedances of the 24-hour PM₁₀ standard. Data capture rates in each quarter were 100%, 100%, 99%, and 100% and 100% annually. The annual average PM₁₀ level was 11.9 µg/m³, which meets the annual PM₁₀ standard of less than 25 µg/m³.

PM_{2.5}

- There were no exceedances of the 24-hour standard for PM_{2.5} of 25 µg/m³ in Hobart in 2021. The annual average PM_{2.5} concentration of 5.3 µg/m³ met the annual average PM_{2.5} standard of 8 µg/m³. Data capture rates by quarter were 96%, 97%, 100%, and 99%, giving an annual rate of 98%.

Devonport**PM₁₀**

- 2021 was the ninth full year of operation of the Devonport air monitoring station. No exceedances of the 24 hour PM₁₀ standard were recorded in this year. The annual average PM₁₀ level was 15.0 µg/m³, which meets the annual PM₁₀ standard of less than 25 µg/m³. Data capture rates by quarter were 100%, 97%, 100%, and 99%, giving an annual rate of 99%.

PM_{2.5}

- There were no exceedances of the 24-hour standard for PM_{2.5} of 25 µg/m³ in Devonport in 2021. The annual average PM_{2.5} concentration of 5.8 µg/m³ met the annual average PM_{2.5} standard of 8 µg/m³. Data capture rates by quarter were 98%, 97%, 92%, and 98%, giving an annual rate of 96%.

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

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

The monitoring plan for Tasmania is available from www.epa.tas.gov.au.

CO Carbon monoxide

(NEPM standard 8 hours = 9.0ppm)

Data not currently available

NO₂ Nitrogen Dioxide

(NEPM standard: 1 hour = 0.08ppm, 1 year = 0.015ppm)

Data not currently available

O₃ Ozone

(NEPM standard: 8 hours = 0.065ppm)

Data not currently available

SO₂ Sulfur dioxide

(NEPM standard: 1 hour = 0.10ppm, 1 day = 0.02ppm)

Data not currently available

Pb Lead

(NEPM standard: 1 year = 0.50µg/m³)

Data not currently available

PM₁₀ Particles as PM₁₀

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

Station	1 Day			1 Year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (mg/m³)	NEPM goal compliance
Hobart	0	0	0	11.9	0
Launceston	0	0	0	15.8	0
Devonport	0	0	0	15.0	0

PM_{2.5} Particles as PM_{2.5}

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

Station	1 Day			1 Year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (mg/m³)	NEPM goal compliance
Hobart	0	0	0	5.3	0
Launceston	6	0	0	6.6	0
Devonport	0	0	0	5.8	0

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 for the reporting year ended 30 June 2022.

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.

On 18 May 2021 the AAQ NEPM was amended to update the ambient air quality pollutant concentration standards for nitrogen dioxide, sulfur dioxide and ozone. Several other changes were also made during this variation.

The ACT's air quality in 2021 was assessed against the revised NEPM standards. In accordance with its agreed policy position, the ACT assessed its compliance for the annual average for particulate matter less than 10 microns (PM₁₀) against a lower standard of 20µg/m³ rather than the NEPM standard of 25µg/m³ from 2016.

Due to a lack of heavy industry, the ACT has never monitored sulfur dioxide (SO₂) as it is primarily an industrial pollutant, and lead monitoring ceased in 2002 with the phase out of leaded petrol.

PART 2—ASSESSMENT OF NEPM

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 2021 monitoring:

- Canberra's air quality dramatically improved in 2021 compared to 2019 and 2020 due to the absence of bushfires and reduction of dust storms. There were no exceedances of the AAQ NEPM standards for carbon monoxide, nitrogen dioxide and ozone at any of the ACT's monitoring stations;
- Without the impacts from prolonged drought and unprecedented bushfires, the daily PM₁₀ standard was not exceeded in 2021, compared to 27 exceedance days in 2020 and 29 exceedance days in 2019;
- Annual average levels for particulate matter (PM₁₀ and PM_{2.5}) were at some of the lowest levels experienced in the past 10 years; and
- PM_{2.5} was the only pollutant that exceeded the national standard. This was exceeded for 5 days in 2021, which were related to controlled burns in NSW and wood heater emissions in the ACT and occurred between late April and early July.

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. There are no allowable exceedances for any of the standards.

An exceptional event rule may apply in the event of bushfires, jurisdiction-authorised hazard reduction burning, or continental scale windblown dust, meaning that during these exceptional events, levels of fine and coarse particulate matter as well as ozone that exceed the NEPM standard will be noted as exceedances but not counted as such for compliance purposes.

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

The ACT Government acknowledges that wood heater emissions have an adverse effect on air quality during winter and continue to implement an integrated program 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 released the “*Bushfire Smoke and Air Quality Strategy 2021–25*” which will guide the ACT Government’s approach to prevent, prepare for, respond to, and recover from significant bushfire smoke events and management of the smoke from wood heaters.

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 8 hours = 9.0ppm)

Station	Number of exceedances	NEPM goal compliance
Florey	0	Met
Monash	0	ND*

* Due to instrument failure, there was insufficient data collected in the fourth quarter at Monash. As a result, compliance was not demonstrated at Monash.

NO₂

Nitrogen Dioxide

(NEPM standard: 1 hour = 0.08ppm, 1 year = 0.015ppm)

Station	1 Hour		1 Year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Florey	0	Met	0.004	Met
Monash	0	Met	0.003	Met

O₃

Ozone

(NEPM standard: 8 hours = 0.065ppm)

Station	8 Hours		
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance
Florey	0	0	Met
Monash	0	0	Met

PM₁₀

Particles as PM₁₀

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

Station	1 day			1 year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (mg/m ³)	ACT goal compliance
Florey	0	0	Met	9.6	Met
Monash	0	0	Met	10.3	Met

PM_{2.5}

Particles as PM_{2.5}

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

Station	1 day			1 year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (mg/m ³)	ACT goal compliance
Florey	1	2	Not Met	6.2	Met
Monash	3	2	Not Met	6.8	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 Minister for Environment, Climate Change and Water Security for the reporting year ended 30 June 2022.

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 nitrogen dioxide (NO₂), sulfur dioxide (SO₂), ozone (O₃), carbon monoxide (CO) and particles (as PM₁₀ and PM_{2.5}) are routinely monitored at three ambient air quality monitoring stations Palmerston, Winnellie and Stokes Hill, all located within the Greater Darwin Region. A station located in Katherine monitors only PM₁₀ and PM_{2.5}; this station is operated by Katherine Town Council (KTC) as part of a performance agreement with the NT EPA.
- Stokes Hill AQMS was relocated a distance of about 800m in April-May 2021. The name of the station and the database were not changed; however, the move resulted in the loss of over 50% of the station's data for the second quarter of the year.
- Major pollutants in the Darwin air shed – PM_{2.5} and PM₁₀, are associated with smoke from controlled and uncontrolled bushfire activities in surrounding bushland.
- The Northern Territory's ambient air monitoring program is undertaken in accordance with the approved monitoring plan. The administrative frameworks for implementation of the NEPM are in place.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

- During 2021, none of the designated ambient air quality monitoring stations in the Darwin region recorded any exceedances of the AAQ NEPM standards for NO₂, SO₂, O₃ or CO; however, compliance against the NEPM goals could not be demonstrated for some air pollutants since insufficient data was collected. As explained below, although some exceedances of short-term standards were recorded for particles (as PM₁₀ and PM_{2.5}) in Darwin and Katherine, all exceedances were directly associated with exceptional events. All the stations, except Stokes Hill, recorded exceedances of the 1-year average PM_{2.5} standard. None of the stations exceeded the 1-year average PM₁₀ standard.
- PM₁₀: To comply with the AAQ NEPM 1-day standard for particles as PM₁₀, no exceedance of the 1-day average standard of 50 mg/m³ is allowed unless determined as an exceptional event. Katherine recorded 6 exceedances, Palmerston recorded 3 exceedances, Stokes Hill recorded 4 exceedances, and Winnellie recorded zero exceedances of the 1-day standard, but these exceedances were linked to smoke from bushfires, which were exceptional events. The PM₁₀ 1-year averages of 19.5, 14.6, 18.1 and 18.0 mg/m³ at Katherine, Palmerston, Stokes Hill and Winnellie, respectively, were below the AAQ NEPM standard of 25 mg/m³. Only Katherine and Palmerston met the AAQ NEPM goals for PM₁₀; Stokes Hill and Winnellie did not achieve the required 75% data capture rate to demonstrate compliance.
- PM_{2.5}: To comply with the AAQ NEPM 1-day standard for particles as PM_{2.5}, no exceedances of the 1-day average standard of 25 mg/m³ is allowed, unless determined as an exceptional event. During 2021, all exceedances of the PM_{2.5} 1-day standard (15 at Katherine, 12 at Palmerston, 4 at Stokes Hill and 27 at Winnellie) were linked to smoke from bushfires, which were classified as exceptional events. Insufficient data was collected at Stokes Hill and Winnellie to demonstrate compliance with the 1-day NEPM goal. The PM_{2.5} 1-year averages of 9.6, 8.5 and 10.7 mg/m³ at Katherine, Palmerston, and Winnellie, respectively, were above the AAQ NEPM standard of 8 mg/m³ as such these stations did not comply with the AAQ NEPM 1-year goal. Stokes Hill's 1-year average of 6.2 mg/m³ was below the standard, but compliance with the goal could not be demonstrated at that site as there was insufficient data collected at the station.

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. There are no allowable exceedances for any of the standards.

An exceptional event rule may apply in the event of bushfires, jurisdiction-authorised hazard reduction burning, or continental scale windblown dust, meaning that during these exceptional events, levels of fine and coarse particulate matter as well as ozone that exceed the NEPM standard will be noted as exceedances but not counted as such for compliance purposes.

The data are presented in greater detail in <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
Palmerston	0	met
Stokes Hill	0	ND
Winnellie	0	met

ND – Not demonstrated due to insufficient data.

NO₂ Nitrogen Dioxide

(NEPM standard: 1 hour = 0.08ppm, 1 year = 0.015ppm)

Station	1 Hour		1 Year	
	Number of exceedances	NEPM goal compliance	Annual average (ppm)	NEPM goal compliance
Palmerston	0	ND	0.0059	ND
Stokes Hill	0	ND	0.0031	ND
Winnellie	0	met	0.0026	met

ND – Not demonstrated due to insufficient data.

O₃

Ozone

(NEPM standard: 8 hours = 0.065ppm)

Station	1 Hour		
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance
Palmerston	0	0	met
Stokes Hill	0	0	ND
Winnellie	0	0	met

ND – Not demonstrated due to insufficient data.

SO₂

Sulfur dioxide

(NEPM standard: 1 hour = 0.10ppm, 1 day = 0.02ppm)

Station	1 hour		1 day	
	Number of exceedances	NEPM goal compliance	Number of exceedances	NEPM goal compliance
Palmerston	0	ND	0	ND
Stokes Hill	0	ND	0	ND
Winnellie	0	met	0	met

ND – Not demonstrated due to insufficient data.

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	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Katherine	0	6	met	19.5	met
Palmerston	0	3	met	14.6	met
Stokes Hill	0	4	ND	18.1	ND
Winnellie	0	0	ND	18.0	ND

ND – Not demonstrated due to insufficient data.

PM_{2.5}

Particles as PM_{2.5}

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

Station	1 Day			1 Year	
	Non-exceptional event exceedances	Exceptional event exceedances	NEPM goal compliance	Annual average (µg/m ³)	NEPM goal compliance
Katherine	0	15	met	9.6	not met
Palmerston	0	12	met	8.5	not met
Stokes Hill	0	4	ND	6.2	ND
Winnellie	0	27	ND	10.7	not met

ND – Not demonstrated due to insufficient data.

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 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

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

The ASC NEPM is an example of partnering among all of Australia's jurisdictions.

The ASC NEPM continues to provide a practical and nationally consistent framework for Australian Government agencies to use in assessing site contamination. The science-based approaches in the ASC NEPM support collaborative action among the Commonwealth, states, and territories on contamination issues.

The ASC NEPM is due to commence its 10-yearly statutory review process in May 2023. The review process will provide opportunities to consult on user needs and to address the need for updated guidance for common types of contamination, including new and revised human health investigation levels (HILs) and ecological investigation levels (EILs).

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The ASC NEPM continues to provide consistent, effective, and efficient national guidance which contributes to achieving Australian Government goals, particularly in the context of the *Environment Protection and Biodiversity Conservation Act 1999*, the *National Environment Protection Council Act 1994*, the *National Environment Protection Measures (Implementation) Act 1998*, and the *Sea Dumping Act 1981*. The NEPM is widely used across Australia by industry, site owners, auditors, and governments.

The ASC NEPM provides useful technical guidance for assessing contaminated sites and includes human health and ecological investigation levels for listed toxicants. The 10-yearly statutory review of the ASC NEPM provides an opportunity to develop additional investigation levels for contaminants such as per- and poly- fluoroalkyl substances, 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. The anticipated review should explore opportunities for inclusion of additional technical guidance on site remediation processes. Additionally, amending NEPC processes to permit more timely updating of technical information and guidance is urgently required.

New South Wales

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure for New South Wales by the Hon. James Griffin MP, Minister for Environment and Heritage, for the reporting year ended 30 June 2022.

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 2021–22, the EPA was notified of 54 contaminated sites, eight new sites were declared to be significantly contaminated under the Act, and regulation of one site was ended after remediation. The NSW EPA monitors and reviews the work of site auditors, which includes checks on whether site audits have been undertaken with due regard to the NEPM. In 2021–22 accredited site auditors issued 226 site audit statements following 165 statutory audits and 61 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 the Western Australian Department of Health, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2021 Update), 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 Action and Solar Homes, for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In Victoria, the ASC NEPM is implemented by the Environment Protection Regulations 2021, the Environment Reference Standard (ERS) and associated EPA contaminated environments policies and guidance. The regulations and ERS came into force on 1 July 2021, as subordinate legislation to the *Environment Protection Act 2017* (EP Act) which applied from the same date.

The EP Act and regulations introduce a range of significant changes to environmental protection laws. These include new obligations relating to the risks contaminated land poses to human health and the environment – a duty to manage contamination risks and a duty to notify EPA in certain circumstances. The ERS incorporates ASC NEPM standards and methodologies, including using investigation and screening levels as a proxy for indicators in the land use settings where no other published standards exist in Australia.

EPA Victoria also contributed to the National Contaminated Environments Network activities and the consultation draft of the PFAS NEMP 3.0 (an update to the PFAS NEMP 2.0).

There continues to be a lack of guidance relating to contaminants of emerging concern. The upcoming review of the ASC NEPM should focus on changes to the instrument to allow for more frequent updates to appendices and supporting documentation as more information about these contaminants becomes known.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The ASC 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 continues to be well supported by environmental auditors and others in the site assessment industry.

We look forward to the upcoming review of the NEPM.

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 2022

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 27 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 2021–22:
 - 26 sites were listed on the EMR for a hazardous contaminant.
 - 79 sites were listed on the EMR as a notifiable activity.
 - 0 sites were listed on the CLR.
 - DES did not appoint any contaminated land auditors during 2021–2022, under the mutual recognition framework based on approvals held in other jurisdictions. Auditor applications are assessed by a DES technical panel who review contaminated land auditor applications.
 - 748 sites were finalised during the reporting period as being adequately assessed according to the NEPM, remediated and removed from the EMR.
 - 16 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.
 - 203 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 27 auditors. The selection and approval of the persons to be auditors has been structured around Schedule B9 of the amended NEPM 1999.

Implementation of the general provisions of the NEPM would be improved by additional guidance for particular common types of contamination. This includes fluorinated organic chemicals that are commonly encountered on contaminated sites.

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

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure for Western Australia by the Department of Water and Environmental Regulation for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The Department of Water and Environmental Regulation (DWER) is responsible for regulating the assessment of site contamination in Western Australia under the *Contaminated Sites Act 2003* (CS Act) and the *Contaminated Sites Regulations 2006*.
- The NEPM and other relevant technical guidelines are taken into account by DWER in regulating contaminated sites, by accredited 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 DWER guidelines is assessed in the site classification/ reclassification process under the CS Act. DWER classified 224 sites (including reclassifications) during the year, bringing the total number of classified sites to 4,528. As at 30 June 2022, 1,337 of these sites were listed on the public contaminated sites database and require remediation or restrictions on the use of the land and/or groundwater to protect public health, the environment and/or environmental values.
- During the year ended 30 June 2022, 96 known or suspected contaminated sites were reported to DWER compared with 133 in the previous year.
- In the same period, DWER received 48 mandatory auditor's reports related to contaminated sites, and a further 29 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 DWER 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. DWER regularly liaises with environmental regulators in other jurisdictions to ensure a nationally consistent approach can be developed for any new implementation issues as they arise.

The limited number of Ecological Investigation Levels (EIL) provided in the NEPM continues to constrain consistent implementation of the guidance across a range of ecological settings. Although the NEPM provides a detailed methodology in Schedule B5b for developing new EIL, 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 contaminant types.

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 Toolbox assists in promoting a nationally consistent approach to emerging issues. The inclusion of new EIL in the Toolbox, 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. Susan Close, Minister for Climate, Environment and Water, for the reporting year ended 30 June 2022.

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 2021–2022 reporting period, the EPA received 170 notifications of site contamination that affects or threatens underground water. In the same period, the EPA recorded 15 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 2021/2022 reporting period included the following:
 - Ongoing consultation on a draft Environment Protection (Site contamination) Policy (EPP) under the Act. 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 orphaned site contamination 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 continue to work collaboratively to develop an approach for the national harmonisation of auditor accreditation.
- Community and stakeholder engagement
 - The EPA continued to work to deliver open and effective engagement and the exchange of information with local communities affected by site contamination, and to ensure that appropriate engagement is planned and implemented by all parties through improved and updated guidance and access to specialist expertise within the EPA.
- Review issues
 - The emergence of new issues where there may be limited or no specific guidance in the ASC NEPM continues to provide challenges in relation to the assessment of risk to human health and the environment. The review of the ASC NEPM is essential to ensure that it continues to:
 - incorporate new scientific knowledge and updated technical information
 - maintain credibility as the premier and authoritative source of technical guidance on health and environmental outcomes related to site contamination in Australia, and
 - provide increased certainty that human health and the environment are adequately protected.

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Assessment of Site Contamination) Measure for Tasmania by Hon Roger Jaensch, Minister for Environment and Climate Change, for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

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

The NEPM is implemented in the following ways:

- Notices issued under the *Environmental Management and Pollution Control Act 1994* routinely require NEPM compliant environmental site assessment.
- Works required pursuant to the *Environmental Management and Pollution Control (Underground Petroleum Storage Systems) Regulations 2020* (UPSS Regulations) must comply with the NEPM.
- Contaminated land issues that are being managed through a collaborative approach adopt the NEPM as the primary guidance document for assessment of contaminated land.
- Tasmanian Planning Authorities may require NEPM compliant assessments where land changes to a more sensitive use.
- The Potentially Contaminated Land Code applies to planning schemes and is being progressively implemented by Tasmanian Planning Authorities. The Code requires that environmental site assessments submitted to satisfy planning purposes are prepared in accordance with the NEPM.
- Ensuring contaminated land site assessor's work is compliant with the NEPM is a key focus in Tasmania. To help improve work quality and outcomes in the assessment and management of site contamination, the Director, EPA requires that contaminated site assessments to be provided to EPA 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. Specifically, it would be useful to clarify when the Commercial soil vapour HILs/HSLs versus the Worksafe indoor air values are applicable. Additionally, the asbestos guidance could usefully be reviewed. Given ongoing issues with the quality of consultant reporting there may be value in provision of sample high quality reports (site details redacted), perhaps to be included in the Toolbox.

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 for the reporting year ended 30 June 2022.

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.

The provisions of the NEPM are implemented under the *Environment Protection Act 1997* (the Act). The Contaminated Sites Environment Protection Policy 2017, made under the Act, is the primary policy document for the assessment and management of contaminated land in the ACT and references the NEPM as the key resource for assessing contaminated land in the ACT.

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

Contaminated land professionals working in the ACT have not raised any significant issues with respect to their implementation of the NEPM.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The NEPM continues to be an effective means of ensuring a nationally consistent approach to contamination assessment.

ACT practitioners continue to recommend changes to administrative processes in relation to NEPM updates to allow for more timely inclusion of emerging contaminants of concern, relevant criteria and 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 Minister for Environment, Climate Change and Water Security for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In the reporting period of 1 July 2021 to 30 June 2022, the Northern Territory (NT) has continued to refer to the Assessment of Site Contamination National Environment Protection Measure (ASC NEPM).
- The NT Environment Protection Authority’s Northern Territory Contaminated Land Guideline (NT CLG), published in 2017 references the ASC NEPM.
- Together the ASC NEPM and NT CLG are referenced in all statutory notices issued for contaminated land requiring investigation and remediation. In this reporting period, 23 audits have been undertaken across the Northern Territory in accordance with the ASC NEMP.
- The NT EPA website includes information on contaminated land investigation, management and remediation. This assists the public, industry and other government bodies in understanding their duties relating to contaminated land in the NT in accordance with the ASC NEPM.
- 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 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 (using a risk-based approach).

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The NEPM and its NT sister document, NT CLG, 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 2022.

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. 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. Officers from the NMI took 202 samples of diesel for testing from retail fuel sites during 2021–22 as part of the Fuel Quality Monitoring Program. Where non-compliance was detected, the NMI took action to ensure fuel was supplied complied with the requirements of the Act. Details of the Government’s sampling results were published in the [Department of Industry, Science, Energy and Resources Annual Report 2021-22](https://www.industry.gov.au/sites/default/files/2022-10/diser-annual-report-2021-22.pdf) (<https://www.industry.gov.au/sites/default/files/2022-10/diser-annual-report-2021-22.pdf>).

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

Public comment on the two draft Statements closed in February 2021.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Following inter-jurisdictional consultations reviewing the need for the Diesel NEPM in 2018 and 2019, it was agreed that 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 further in the future in the context of any decision to progress national noxious emissions standards for vehicles to Euro 6d/ VI. Any potential changes to this NEPM would need to consider outcomes from the review of the *National Environment Protection Council Act 1994* and the Conran Review.

The National Clean Air Agreement (NCAA) 2021–2023 work plan includes 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. James Griffin MP, Minister for Environment and Heritage, for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In NSW the *Protection of the Environment Operations Act 1997* (POEO Act) and the Protection of the Environment Operations (Clean Air) Regulation 2021 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), Transport for New South Wales (TfNSW) and the Department of Planning and Environment (DPE) continue to collect data on the diesel vehicle fleet and implement Government programs to reduce diesel emissions. In 2021–22 NSW continued the Smoky Vehicles Program and the TfNSW Clean Fleet Program and continued the transition of the State's bus fleet to electric under the Zero Emission buses transition plan.

NSW diesel fleet profile

TfNSW registration data show the proportion of diesel vehicles in the fleet constituted 22.14 per cent of the total NSW fleet as at 30 June 2022 (see Table 1 below). This is compared to 21.51 per cent in June 2021, and 20.87 per cent in June 2020.

TfNSW registration data indicate that, between June 2021 and June 2022, the number of diesel vehicles registered in NSW increased by 66,518 or 4.47 per cent. Light commercial vehicles increased by 6.93 per cent over this period and constitute the largest sector of the diesel fleet at 42.03 per cent. Off-road passenger vehicles account for 32.63 per cent of the diesel fleet. Together, these categories account for 74.66 per cent of the total diesel fleet in NSW. Table 2 shows changes in diesel vehicles by category between June 2021 and June 2022.

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

NSW June 2022	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	3.01%	7.22%	0.16%	9.30%	1.54%	0.36%	0.17%	0.18%	0.19%	22.14
Vehicles by category in diesel fleet	13.60%	32.63%	0.73%	42.03%	6.95%	1.61%	0.76%	0.83%	0.85%	100%

Source: Transport for NSW registration data (June 2022)

Table 2: Change in diesel vehicles by category

Vehicle type	No. of diesel vehicles		Change	Percentage change (%)	Proportion of total decrease (%)	Proportion of total increase (%)
	Jun-21	Jun-22				
Passenger Vehicles	200,909	211,265	10,356	5.15%		15.57%
Off-Road Passenger Vehicles	496,691	507,085	10,394	2.09%		15.63%
People movers	11,488	11,405	-83	-0.72%	-0.12%	
Small Buses	11,321	11,794	473	4.18%		0.71%
Light Trucks	610,812	653,166	42,354	6.93%		63.67%
Light Plants	820	741	-79	-9.63%	-0.12%	
Buses	13,044	12,854	-190	-1.46%	-0.29%	
Heavy Trucks	106,416	108,031	1,615	1.52%		2.43%
Prime Movers	24,294	25,088	794	3.27%		1.19%
Heavy Plants	3,085	3,018	-67	-2.17%	-0.10%	
Other	8,557	9,508	951	11.11%		1.43%
Total	1,487,437	1,553,955	66,518	4.47%		

Source: Transport for NSW registration data (June 2022)

Diesel vehicle emissions estimates

Diesel vehicles made up 22.14 % of the total NSW fleet at 31 March 2022, 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 % oxides of nitrogen (NO_x) and 13 % of fine particle (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 % of NO_x and 90 % of exhaust particle emissions (as 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. It is noted that the period during and after COVID-19 lockdown in 2021 had an impact on the vehicle distance travelled in NSW.

Except for NO_x emissions for the light vehicle fleet, the total per kilometre PM_{2.5} and NO_x exhaust emissions from diesel vehicles are estimated to have fallen significantly from 2011 to 2021, following the introduction of more stringent vehicle emissions regulations combined with fleet turnover.

- For both light and heavy-duty diesels, the rate of reduction in PM_{2.5} emissions is larger than the rate of increase in vehicle kilometres travelled, resulting in a decrease of greater than 50% in exhaust PM_{2.5} emissions from the diesel fleet, more than offsetting an estimated 25% increase in non-exhaust 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 estimated to have decreased 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.

National vehicle emission and fuel standards

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 the earliest possible introduction of the tighter standards for diesel vehicles. Over 2021–22 NSW DPE continued to support early adoption of the Euro 6/VI emissions standards, as well as tighter fuel standards to enable the control technology needed to meet tighter emission standards.

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 2021–22 the EPA issued 675 advisory letters based on public reports, of which 566 advisory letters were to diesel vehicle owners.

Additionally, eight defective vehicle notices were issued in 2021–22 of which seven 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 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	2021-22
Total number of vehicles that received fines	186	114	289	78	89	75	6	0	0	0	0
Diesel vehicles that received fines	173	109	283	76	89	74	6	0	0	0	0
<i>Percentage of all vehicles fined that were diesel vehicles</i>	93%	96%	98%	97%	100%	99%	100%	0	0	0	0
Total vehicles that received advisory and warning letters	556	552	891	812	782	957	681	835	804	810	675
Diesel vehicles that received advisory and warning letters	96	74	462	423	433	475	438	623	621	628	566
<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%	84%

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 4,838 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 2021-2022, and a small reduction in participation was evident.

Other programs

Zero emissions buses transition plan

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/electric-vehicle-strategy) (<https://www.environment.nsw.gov.au/topics/climate-change/net-zero-plan/electric-vehicle-strategy>) identified commitments to replace the State's 8,000 plus Diesel and Compressed Natural Gas (CNG) bus fleet with zero emission buses. From 2021, TfNSW commenced the roll out of battery electric buses across Sydney. The transition of the NSW bus fleet to zero emission buses, powered by renewable energy, is a key initiative to support the NSW Government's net zero commitments.

In June 2022 the NSW Government announced an investment of \$218.9 million over the next seven years in the 2022–23 NSW Budget to support the bus fleet to move to zero emissions technology and confirmed the rollout plan which will prioritise sustainability and local manufacturing. The NSW Government has also set aside a further almost \$2 billion for the zero emission buses project, to begin a higher scaled transition across NSW and invest in local jobs, subject to consideration of a final business case.

The NSW Zero Emission Buses Transition Plan will see Greater Sydney transitioned fully by 2035, outer metropolitan regions by 2040 and regional NSW by 2047. Transitioning the NSW bus fleet to zero emissions technology will deliver cleaner air and quieter streets for NSW communities, more comfortable journeys for customers, greater efficiency for operating partners and a boost to the local EV manufacturing and training industries.

TfNSW has not ordered a single-storey diesel bus for Greater Sydney since 2019. There were over 100 battery electric buses on NSW roads as at June 2022, with 200 expected by mid-2023.

Construction industry

In 2021–22 DPE continued to administer the [NSW Government Resource Efficiency Policy \(https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/sustainability-government/net-zero-government\)](https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/sustainability-government/net-zero-government) (GREP). The GREP includes requirements to address non-road diesel engine emissions through government procurement and contracts.

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.

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 EPA issued the new rolling stock operator licences in 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. In 2021–22 the EPA continued to work with the rail industry to progressively reduce locomotive air emissions.

National Clean Air Agreement – Evaluating the potential for a national approach to non-road diesel engine emissions

Under the [National Clean Air Agreement \(https://www.dcceew.gov.au/environment/protection/air-quality/national-clean-air-agreement/evaluation-non-road-diesel-engine-emissions\)](https://www.dcceew.gov.au/environment/protection/air-quality/national-clean-air-agreement/evaluation-non-road-diesel-engine-emissions), NSW DPE and the Commonwealth Department of Climate Change, Energy, the Environment and Water are working to evaluate the potential for a national approach to manage non-road diesel engine emissions in Australia.

Non-road diesel engines are used in a wide range of industries and applications, including construction, mining, manufacturing, airport services, agriculture, and marine sectors. Diesel engine exhaust contains high levels of pollutants, including fine particles (PM_{2.5}) and NO_x, and has been declared as carcinogenic by the [World Health Organisation's International Agency for Research on Cancer \(https://www.iarc.who.int/wp-content/uploads/2018/07/pr213_E.pdf\)](https://www.iarc.who.int/wp-content/uploads/2018/07/pr213_E.pdf). It contributes to premature deaths and health related problems, such as cardiovascular, cardiopulmonary and respiratory diseases, and lung cancer.

Unlike other countries (including the United States, the European Union, China, India, Brazil and Japan), and unlike for on-road (passenger) vehicles in Australia, there are currently no national standards or approaches to manage emissions from non-road diesel engines in Australia.

In 2021–22 DPE continued to work with the Commonwealth Department of Climate Change, Energy, the Environment and Water on a cost benefit analysis examining the impact of options to manage emissions from non-road diesel engines. This follows on from a market analysis of the non-road diesel sector completed in 2019 and release of a [discussion paper \(https://www.dcceew.gov.au/environment/protection/publications/ndre-evaluation-discussion-paper\)](https://www.dcceew.gov.au/environment/protection/publications/ndre-evaluation-discussion-paper) and online stakeholder forum in 2020. Further information on the project can be found on the [National Clean Air Agreement website \(https://www.dcceew.gov.au/environment/protection/air-quality/national-clean-air-agreement/evaluation-non-road-diesel-engine-emissions\)](https://www.dcceew.gov.au/environment/protection/air-quality/national-clean-air-agreement/evaluation-non-road-diesel-engine-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 Action and Solar Homes for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The diesel NEPM in Victoria is administered and implemented by the Environment Protection Regulations 2021.

These regulations came into force on 1 July 2021, as subordinate legislation to the *Environment Protection Act 2017* which applied from the same date.

With the introduction of the Act, environment protection law shifted to a prevention-based approach. Central to this approach is the general environment duty (GED). It applies to all Victorians.

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 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 and most of 2021/2022, there were no letters issued due to impacts from Covid 19 restrictions.

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	2021/22
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									973	0	264

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

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 Honourable Mark Bailey, Minister for Transport and Main Roads, for the reporting year ended 30 June 2022.

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.

DES has conducted vehicle emission measurements on diesel passenger vehicles using remote sensing and board emissions testing know as Portable Emissions Measuring system (PEMS).

The studies have been published in international peer-reviewed journals (*below*):

- Smit, R., Awadallah, M., Bagheri, S., Surawski, N.C., 2022. Real-world emission factors for SUVs using on-board emission testing and geo-computation, *Transp. Res.-D*, 103286, 1-21, <https://doi.org/10.1016/j.trd.2022.103286>.
- Smit, R., Bainbridge, S., Kennedy, D., Kingston, P. 2021. A decade of measuring on-road vehicle emissions with remote sensing in Australia, *Atmospheric Environment*, 252, 1 May 2021, 118317, <https://doi.org/10.1016/j.atmosenv.2021.118317>.

The results from the emission testing campaigns consistently show that there are serious issues with modern diesel Sports Utility Vehicles (SUVs) and Light Commercial Vehicles (LCVs) in Australia (and possibly trucks and buses).

They have very high NO_x/NO₂ emissions. They are currently underestimated by the real-world PEMS-based EU emissions data used in Australian emission prediction software.

Continued dieselisation of Light Duty Vehicles (LDVs) in Australia under the current Euro 5 emission standards and more stringent NO₂ air quality criteria could potentially result in local air quality issues near busy roads, similar to Europe.

Another issue identified with remote sensing is the poor performance of modern diesel regarding PM (soot) emissions and the RSD data suggest that issues with diesel particulate filters are noticeably higher in Australia when compared with the UK.

In addition to the observed air pollution emission issues with diesel vehicles, the climate-friendly image of Australian diesel cars is incorrect: they have, on average, 10% higher CO₂ emission rates (g/km) than Australian petrol cars.

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 2021 to 30 June 2022 there were a total of 2,805 vehicles reported through the smoky vehicle online reporting form in Queensland with 178 warning letters issued. Of the reported vehicles 1,088 were diesel powered. Of the remaining 1539 that did not receive a warning letter, 606 supplied incorrect registration details, 854 did not supply enough data to identify the vehicle, 7 were unregistered and 72 were not related to smoky vehicles but were reported via the smoky vehicle hotline.

Increased uptake in diesel vehicles

Diesel vehicle emissions are expected to continue to decrease moderately through fleet turnover, as higher polluting older heavy vehicles are replaced with newer, less polluting heavy vehicles. The gradual tightening of emission standards to harmonise with European Union standards is contributing to the reduction of diesel emissions and likely improvement in air quality.

Over a five-year period, diesel powered vehicles have increased from 1,156,613 as at 30 June 2018 to 1,431,001 as at 30 June 2022 representing an increase of 23.7% in Queensland.² The light vehicle sector has experienced the most growth.

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 19,673 heavy vehicles while private approved inspection stations inspected a further 51,192. 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.

The National Heavy Vehicle Regulator (NHVR) is now overseeing heavy vehicle standards. The NHVR has implemented a new simplified test procedure – Portable Emissions Measuring system (PEMS) to test modified heavy vehicle to ensure emissions remain compliant with the appropriate Australian Design Rules (ADRs). The NHVR has also implemented vehicle standards guides to assist with compliance. The NHVR continues to explore options to assist industry in emissions reductions.

The Brisbane City Council is in the early stages of investigation and negotiation into the purchase and commission of electric buses for use in local routes.

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 NHVAS is a scheme recognising operators who have robust safety management systems in place. The scheme gives heavy vehicle owners more responsibility for servicing their vehicles and ensuring they are compliant with maintenance and general duty requirements under road transport laws.

² Totals exclude Conditionally registered vehicles and mobile machinery.

Prior to accreditation, operators must pass an independent audit of their management systems certifying that their management system is appropriate, is being followed and adheres to the scheme standards. Additional independent audits are carried out to maintain accreditation.

There are 47,833 Queensland registered heavy vehicles currently participating in the NHVAS **maintenance scheme**, representing a slight increase on last years accredited vehicles. The vehicles are operating under 1,019 operators. The majority of vehicles participating in the NHVAS maintenance scheme use diesel fuel and it is anticipated that if they are well maintained they are less likely to have problematic emissions.

There are 1,199 Operators and 11,312 heavy vehicles operating under the NHVAS **mass scheme** which allows the vehicles to carry higher loads in exchange for being tracked to ensure drivers remain on specified routes. These vehicles are larger but make fewer trips and improve productivity, congestion and fuel efficiency.

Diesel vehicle retrofit programs

Queensland has no diesel retrofit programs at this time.

Other programs

While there are no other programs currently in place in Queensland, TMR supports the introduction of innovative, higher productivity heavy vehicles through Performance Based Standards (PBS) which allow for vehicles to comply based on performance rather than prescriptive standards.

PBS vehicle combinations equate to fewer heavy vehicles, less congestion and better safety outcomes on the network. On some routes in Queensland, PBS heavy vehicles (A-doubles) have halved the number of trips for certain freight tasks through increased capacity and smart design PBS is improving efficiency, increasing diesel fuel savings, and reducing associated emissions.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for Western Australia by the Department of Water and Environmental Regulation for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In Western Australia, the National Environment Protection (Diesel Vehicle Emissions) Measure (Diesel NEPM) is implemented by the Department of Water and Environmental Regulation (DWER) under the *National Environment Protection Council (Western Australia) Act 1996* and the *Western Australian Environmental Protection Act 1986*.
- Vehicle emissions in Western Australia are regulated under the *Road Traffic (Vehicles) Act 2012* and *Road Traffic (Vehicles) Regulations 2014*, which are administered by the Department of Transport (DoT). The ‘ten-second rule’ in the regulations is the primary mechanism used to target visually polluting diesel and petrol vehicles.
- The Western Australian Government’s Perth Air Quality Management Plan (AQMP) aims to ensure that clean air is achieved and maintained throughout the Perth metropolitan region.
- The AQMP identifies that the management of emissions from in-service petrol and diesel vehicles is critical to achieving clean air, and contains a range of initiatives that target on-road vehicles.
- The implementation of vehicle emissions reduction initiatives in the AQMP is largely complementary to the outcomes of the Diesel NEPM.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The implementation of vehicle emissions reduction initiatives of the AQMP and the CleanRun program is the foundation of vehicle emissions reduction strategies undertaken by 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 2021–22 the Smoky Vehicle Reporting Program (SVRP) received 796 reports, which is an average of 66 reports per month, representing a 16 per cent increase in reports from 2020–21. The number of reports received continues a trend of 15–20 per cent increases each year in reports received observed in the last 3 years.

There were no significant changes in the operation of the SVRP for 2020–21.

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. 666 advisory letters were sent to reported vehicle owners in 2021–22 (84 per cent valid report rate).

Table 1 summarises the responses received for vehicles reported from July 2021 to June 2022.

Table 1. Responses from owners of reported vehicles

Response	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21	2021–22
Reports received	455	480	415	482	579	685	796
Letters sent	372	424	353	417	505	576	666
Responses received	282	292	191	225	265	216 ³	317
Vehicle repaired	127 (45.0%)	136 (46.6%)	129 (67.5%)	142 (63.1%)	174 (65.4%)	133 (61.6%)	206 (65.0%)
Vehicle does not smoke	90 (31.9%)	96 (32.9%)	49 (25.7%)	67 (29.8%)	71 (26.7%)	68 (31.5%)	98 (30.9%)
Can't afford to repair	3 (1.1%)	6 (2.1%)	0 (0%)	0 (0.0%)	1 (0.4%)	0 (0.0%)	3 (0.9%)
Disposed of vehicle	8 (2.8%)	16 (5.5%)	5 (2.6%)	7 (3.1%)	12 (4.5%)	6 (2.8%)	6 (1.9%)
Wrong vehicle	11 (3.9%)	19 (6.5%) ⁴	1 (0.5%)	1 (0.4%)	2 (0.8%)	2 (0.9%)	3 (0.9%)
Other	40 (14.2%)	19 (6.5%)	7 (3.7%)	8 (3.6%)	6 (2.3%)	7 (3.2%)	1 (0.3%)
Petrol	57 (20.2%)	49 (16.8%)	66 (20.2%)	70 (16.8%)	95 (17.5%)	122 (19.1%)	99 (13.5%)
Diesel	194 (68.8%)	208 (71.2%)	259 (79.4%)	345 (82.7%)	443 (81.6%)	510 (79.7%)	633 (86.0%)
LPG	1 (0.4%)	0 (0%)	0 (0%)	2 (0.5%)	5 (0.9%)	8 (1.3%)	4 (0.5%)

2021–22 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. 2021–22 had a notable decrease in petrol vehicles reported (and corresponding increase in diesel vehicles) with respect to total vehicles reported.

There were 30 vehicles reported more than once in 2021–22, four of which were reported more than twice. Of the vehicles reported more than once, 14 vehicle owners responded to the advisory letters sent. Annual reporting on smoky vehicle reporting is published on the DWER website, summarising program data and analysis of vehicle trends observed: [Smoky Vehicle Reporting Program \(https://www.wa.gov.au/government/document-collections/smoky-vehicle-reporting-program\)](https://www.wa.gov.au/government/document-collections/smoky-vehicle-reporting-program).

³ 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 2019–2020. Response percentages are not expected to significantly change.

⁴ 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 Australian government does not undertake diesel vehicle emission testing and repair programs.

Audited maintenance programs for diesel vehicles

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

In Western Australia, operators of certain types of heavy vehicles must become accredited to gain a permit or notice from Main Roads Western Australia. The majority of these vehicles use diesel as their primary fuel source. Western Australian Heavy Vehicle Accreditation (WAHVA) 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 four accreditation modules – Accreditation Common Standards, 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 Australian government does not operate a diesel vehicle retrofit program.

Other programs

There are no other programs currently run by the Western Australian 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. Susan Close, Minister for Climate, Environment and Water, for the reporting year ended 30 June 2022.

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 and 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

- 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, the public is encouraged to report smoky vehicles directly to the Police. For the reporting period, there has not been any complaints made to Police.
- With the closure of the Regency Park Emissions Test Facility during the 2013–14 financial year, there has been no means to accurately test diesel emissions in South Australia other than by visual assessment.

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 DIT's 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 Hon Roger Jaensch Minister for the Environment and Climate Change for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- Under Section 12A of the Tasmanian State Policies and projects Act 1993, National Environmental Protection Measures made under Section 14(1) of the National Environment Protection Council (Tasmania) Act 1995 are taken to be State Policies which have been passed by both Houses of Parliament.
- In 2006 and 2007, a contract between the then Department of Tourism, Arts and the Environment and the Commonwealth Department of the Environment and Water Resources facilitated the funding of a series of diesel engine skill gap training workshops in the south, north and northwest of the State. Funding provided for the purchase of diesel emissions testing equipment and the delivery of free three-hour training courses for 321 qualified mechanics.
- Since the end of this program TasTAFE has continued to utilise this equipment in training courses for automotive apprentices. The equipment is used in 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 2022, there were 15844 diesel powered heavy vehicles (that is vehicles over 4.5 tonnes) and 158847 diesel powered light vehicles registered in the State. This represents an increase of 3.1 % and an increase of 7.0 % respectively since 1 July 2021. Of the total of 695446 vehicles registered in Tasmania on 30 June 2021, 25.1 % were diesel powered.

Smoky vehicles program

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

Diesel vehicle emission testing and repair programs

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

Audited maintenance programs for diesel vehicles

There is no audited maintenance program specific to diesel vehicle emissions in Tasmania, however the National Heavy Vehicle Regulator now administer the National Heavy Vehicle Accreditation Scheme (previously performed individually by jurisdictions). Heavy vehicle Maintenance Management Accreditation is one module within this scheme that encourages heavy vehicle operators to take more responsibility for maintaining their vehicles correctly and ensuring that they are always in good mechanical condition, compliant with relevant vehicle standards and operating efficiently. Fuel quality and fault repair activity standards apply in this module. Scheduled compliance audits and triggered audits are requirements of this accreditation.

Diesel vehicle retrofit programs

Statistics are not compiled on diesel vehicle retrofitting.

Other programs

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

Australian Capital Territory

Report to the NEPC on the implementation of the National Environment Protection (Diesel Vehicle Emissions) Measure for the Australian Capital Territory by Ms Rebecca Vassarotti MLA for the reporting year ended 30 June 2022

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, the Transport Canberra and City Services Directorate (TCCS) took delivery of 11 Euro VI diesel buses in 2021–22 replacing 11 aged non-Euro compliant diesel buses. The number of Euro VI buses in the TC fleet stands at 183. In addition, 70 CNG buses purchased between 2004 and 2008 remain in the fleet. There are a total of 384 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 Minister for Environment, Climate Change and Water Security for the reporting year ended 30 June 2022.

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 71,367 diesel vehicles registered, representing around 43.6 per cent of the total fleet. The proportionate share of diesel vehicles in the NT is generally higher than the national vehicle fleet (approximately 26 per cent in 2021). Statistics released by the Australian Bureau of Statistics in 2021 indicated 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 14 per cent in Alice Springs, 8 per cent in Katherine and 2 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 45 per cent of the total vehicle fleet. In Katherine and Tennant Creek, the diesel vehicles comprise 60 per cent of the total vehicle fleet, indicating a higher reliance on diesel vehicles in remote areas.

Of the heavy vehicle diesels registered in the Northern Territory, 62 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 8 per cent in Katherine.

Smoky vehicles program

A smoky vehicle program is undertaken as part of the Territory's vehicle registration and roadworthiness testing procedures. Records of diesel vehicles issued with defect orders show that only a small number of vehicles checked as part of the vehicle registration process receive a defect notice due to engine smoke.

Diesel vehicle emission testing and repair programs

Pollutants associated with diesel emissions in the Territory are well below emission standards. Therefore, the current air quality conditions are not considered a trigger for change in relation to managing diesel emissions in the Territory. The Northern Territory will continue to monitor the need for action on diesel emissions and will take appropriate action as required.

Audited maintenance programs for diesel vehicles

Vehicle roadworthy inspections are undertaken periodically for light and heavy vehicles and these inspections include checking that all required emission control equipment is fitted as well as the detection of smoky vehicles. Periodic roadworthy inspections are required at registration renewal and the frequency of inspections is determined by the vehicle type, age and category. Since 1 July 2013, light vehicle inspections are required at five years, 10 years and then annually. All heavy vehicles require an annual roadworthy inspection.

Diesel vehicle retrofit programs

The majority of the Northern Territory road train fleet employs the latest technology in engine management systems to minimise fuel consumption. On a payload per emission basis, road trains operating line haul operations in remote Australia are considered to be some of the most efficient road freight vehicles in the world.

Other programs

The Northern Territory's open access policy provides for 'as of right' access for road trains and 100 per cent network access for vehicles operating at higher mass limits. In addition, the Territory's innovative vehicle policy promotes the development of high productivity innovative vehicle combinations which can deliver further efficiency benefits.

APPENDIX 5:

Jurisdictional reports
on the implementation
and effectiveness of the
Movement of Controlled
Waste between
States and Territories
National Environment
Protection Measure





Commonwealth

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste) Measure from the Commonwealth, for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Commonwealth supports the Movement of 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:

- Produced the third national assessment of Australia’s hazardous waste infrastructure capacity and future needs.
- Preparing the fourth edition of the [Australian hazardous waste data and reporting standard – June 2022](https://www.dcceew.gov.au/environment/protection/publications/australian-hazardous-waste-data-reporting-standard-2022) (<https://www.dcceew.gov.au/environment/protection/publications/australian-hazardous-waste-data-reporting-standard-2022>). This national standard builds on the 2019 version and establishes principles and processes for classifying hazardous waste; methods for obtaining, adjusting and collating national hazardous waste data; and standardised approaches for classifying, managing and reporting hazardous waste hazardous waste data.
- Annual data on hazardous waste generation produced for reporting under the Basel Convention (for the 2019 reporting year).

For more information, see 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. James Griffin MP, Minister for Environment and Heritage, for the reporting year ended 30 June 2022.

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*](#) 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 and legislation 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:

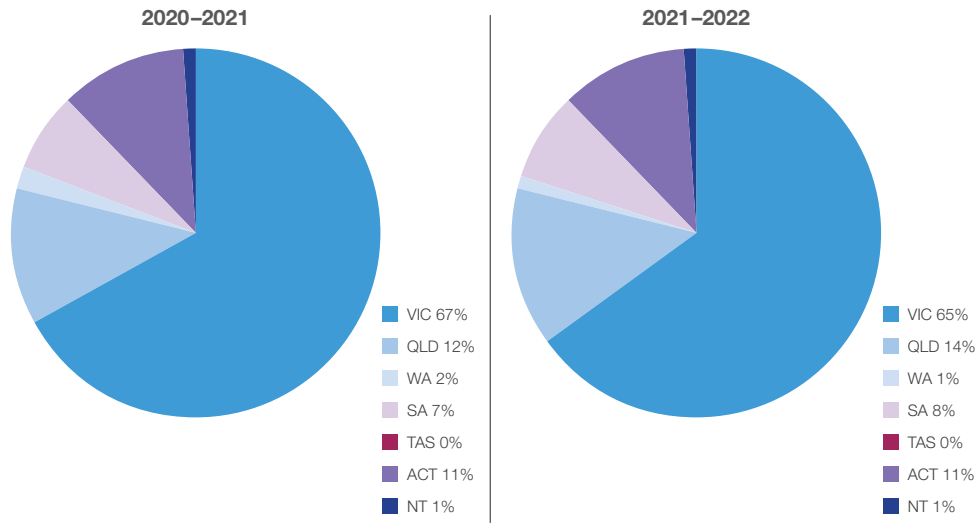
To provide a basis for ensuring that controlled wastes which are to be moved between States and Territories are properly identified, transported, and otherwise handled in ways which are consistent with environmentally sound practices for the management of these wastes.

In 2021–22, a total of 72,283 tonnes of controlled waste in 4,299 movements was reported as having been transported into NSW from interstate (Tables 2 and 4). This is a 12% decrease on the 82,468 tonnes moved in 2020–21 and a 14% decrease on the 4,727 waste movements that occurred in 2020–21. This compares to the reported 3% decrease in controlled waste tonnage and 14% decrease in waste movements from 2019–20 to 2020–21.

NSW received less waste in 2021–22 compared to 2020–21 from Victoria, Western Australia and the ACT, and received more waste from Queensland, South Australia, Tasmania, and the Northern Territory.

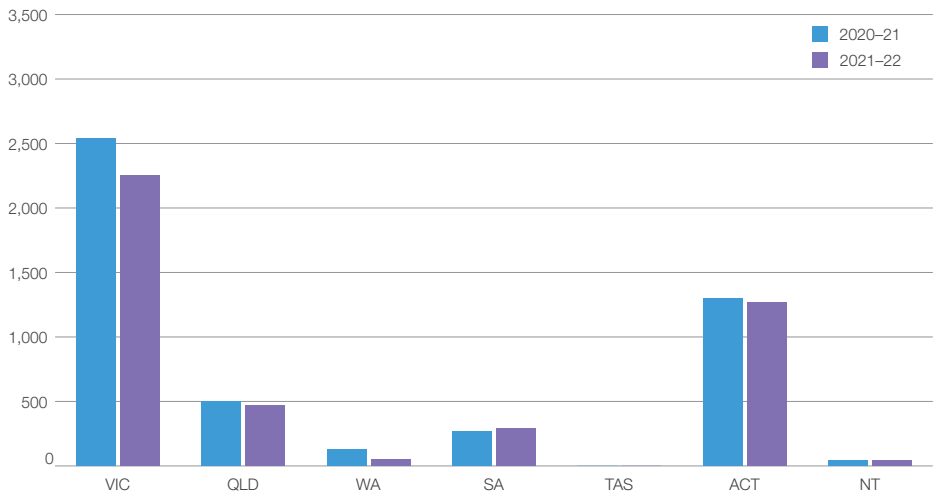
The greatest increase was from South Australia (607 tonnes, 11%), followed by Queensland (306 tonnes, 3%), the Northern Territory (65 tonnes, 10%) and Tasmania (16 tonnes, 100%). The greatest decrease in waste was from Victoria (8,471 tonnes, 15%), followed by the ACT (1,414 tonnes, 15%) and Western Australia (1,295 tonnes, 67%) (Figures 1 and 2).

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



During the reporting period there were 428 less movements into NSW than during the 2020-2021 period; with Victoria accounting for the largest decrease (by 293) and South Australia the largest increase (by 18) (Figure 3).

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



Highlights by jurisdiction

Victoria: Transport of acid waste decreased by 40% to 12,861 tonnes. Organic solvents increased by 73% to 743 tonnes and miscellaneous waste increased by 697% to 2,107 tonnes. Waste paints, resins, inks and organic sludges decreased by 49% to 1,169 tonnes, while clinical and pharmaceutical waste decreased by 76% to 326 tonnes.

Queensland: Inorganic chemicals waste increased by 5% to 8,133 tonnes. Waste paints, resins, inks and organic sludges increased by 58% to 253 tonnes, as did organic solvents by 135% to 328 tonnes. Organic chemicals and clinical and pharmaceutical waste decreased by 66 and 94%, to 89 and 14 tonnes, respectively.

Western Australia: Inorganic chemical waste decreased by 74% to 481 tonnes. There was also an increase in waste oils by 203% to 108 tonnes, and increase in soil/sludge waste by 76% to 28 tonnes.

South Australia: There was an increase in waste paints, resins, inks and organic sludges from 9 tonnes to 170 tonnes. Clinical and pharmaceutical waste decreased by 15% to 358 tonnes.

Tasmania: Only 16 tonnes of miscellaneous waste was recorded as transported to NSW.

ACT: There was a 13% decrease in transport of putrescible and organic waste to 5,571 tonnes. Clinical and pharmaceutical waste decreased by 73% to 83 tonnes.

Northern Territory: the total quantity of waste transported from the Northern Territory (total 750 tonnes) was similar to the previous reporting period (685 tonnes), with the main component being inorganic chemicals (723 tonnes).

Highlights by waste type

Oils: increased by 4% from 2020–2021 to 29,410 tonnes, with Victoria contributing the most (22,267 tonnes).

Acids: decreased by 40% from 2020–2021 to 12,875 tonnes, with Victoria's contribution reducing the most (by 8,464 tonnes).

Inorganic chemicals: have reduced slightly by 7% from 2020–21 to 14,468 tonnes.

Paints, resins, inks, organic sludges: decreased from 2021–21 by 31% from 2,618 tonnes to 1,809 tonnes, with Victoria contributing to the majority of the decrease (1,109 tonnes decrease).

NOTE: data is still being reported to the EPA and undergoing a QA/QC process. The 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 2021 to 30 June 2022

Reporting Year	Consignment authorisations issued
2019–20	1,392
2020–21	1,359
2021–22	1,290

Table 2: Quantity of controlled waste into NSW for the period 1 July 2021 to 30 June 2022
Tonnes per waste category by state/territory

Group	Description	VIC	QLD	WA	SA	TAS	ACT	NT	Total (T)
A	Plating & heat treatment	0.00	2.99	0.00	0.00	0.00	0.00	0.00	2.99
B	Acids	12,860.76	0.51	13.00	0.00	0.00	0.30	0.00	12,874.57
C	Alkalis	129.90	562.15	0.00	0.00	0.00	0.66	0.87	693.58
D	Inorganic chemicals	5,058.66	8,133.40	481.03	68.27	0.00	3.46	723.31	14,468.13
E	Reactive chemicals	10.39	1.99	0.00	0.00	0.00	0.12	0.00	12.50
F	Paints, resins, inks, organic sludges	1,108.50	252.92	0.00	170.36	0.00	271.63	5.27	1,808.68
G	Organic solvents	742.86	327.51	2.98	22.10	0.00	19.98	1.27	1,116.70
H	Pesticides	1.20	0.40	0.00	0.00	0.00	0.20	0.00	1.80
J	Oils	22,266.67	460.05	107.93	5,199.68	0.00	1,356.86	19.12	29,410.31
K	Putrescible/ organic waste	1,766.76	5.25	0.00	0.00	0.00	5,571.22	0.00	7,343.23
L	Industrial washwater	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r
M	Organic chemicals	191.09	88.65	0.00	51.49	0.00	0.29	0.49	332.01
N	Soil / sludge	209.48	155.34	27.82	101.45	0.00	191.97	0.00	686.06
R	Clinical & pharmaceutical	326.35	14.30	6.50	357.77	0.00	83.53	0.00	788.45
T	Miscellaneous	2,107.43	166.74	0.00	216.96	16.48	235.98	0.00	2,743.59
Total		46,780.02	10,172.18	639.26	6,188.09	16.48	7,736.20	750.34	72,282.60

n/r = not recorded under this category

Table 3: Discrepancies in movements of controlled waste into NSW for the period
1 July 2021 to 30 June 2022

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 2021 to 30 June 2022

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr	Total
N/A	2,247	453	37	270	1	1,247	44	0	4,299

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 Action and Solar Homes for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Environment Protection Act 2017 came into effect 1 July 2021. The accompanying Environment Protection Regulations 2021 described the requirements for waste transport recording, including interstate transport of controlled waste, which EPA Victoria have put into action with the launch of Waste Tracker.

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 on waste tracking solutions.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

1 July 2021 saw the introduction of a new Environment Protection Act and Regulations, and with them, a new waste reporting system, Waste Tracker. Waste Tracker can be used to record the transport of waste into Victoria to permissioned sites.

Largest proportion of waste coming into Victoria was R code clinical waste. Next largest codes were M, which includes soil contaminated with PFAS.

Total waste coming into the state was reduced compared to last year.

Table 1: Number of consignment authorisations issued by Victoria

Reporting Year	Consignment authorisations issued
2020–21	512
2021–22	227 (waste into Victoria – 196) (waste out of Victoria – 31)

Please note the following points regarding the data presented in Tables 2, 3 and 4 (below):

1. 'Cleansed' waste transport dataset

The data presented has been extracted from version 1.0 of EPA's 'cleansed' waste transport dataset. The cleansed dataset represents waste transport data collected or received by EPA via Waste Tracker and other means, a subset of which has subsequently been transformed to improve the accuracy and reliability of the data. The improvement in accuracy has been achieved by correcting suspect errors made by duty holders. This involves correcting suspected erroneous waste amounts (e.g. 10,000 tonnes corrected to 10,000 kg), suspected erroneous waste codes, and other waste record information. The dataset does not represent a correction of all known or suspected errors.

2. Lack of complete record of waste movements

There are an unquantified number of movements of controlled waste into Victoria from outside Victoria that have not been reported to, or digitised by, EPA Victoria. As such, the reported figures may be unreliable.

3. User entry and system errors

Whilst EPA has modified waste record data to 'correct' certain suspected errors, the data used to produce the results may contain 'uncorrected' errors. As it is unclear which uncorrected errors, if any, are present in the data, it is therefore also unclear how such errors impact the reported figures.

Table 2: Quantity of controlled waste into Victoria for the period 1 July 2021 to 30 June 2022 – Units per waste category by State/Territory

Code	Units	NSW	NT	QLD	SA	TAS	WA	ACT	Grand Total
A	Tonnes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B	Tonnes	354.42	0.04	0.00	324.43	0.00	0.00	0.00	678.89
C	Tonnes	142.07	0.00	0.00	0.00	0.00	0.00	0.00	142.07
D	Tonnes	97.54	0.04	0.00	303.81	246.99	60.60	0.00	708.98
F	Tonnes	1,060.61	0.00	160.73	162.27	0.00	745.44	0.00	2,129.05
G	Tonnes	994.89	0.00	224.28	298.39	0.00	141.56	0.00	1,659.12
H	Tonnes	65.77	0.00	0.00	0.00	5.04	303.18	0.00	373.99
J	Tonnes	528.27	0.89	0.00	69.80	1,877.88	351.00	0.00	2,827.85
K	Tonnes	459.98	61.53	0.00	0.00	0.00	0.00	0.00	521.51
L	Tonnes	1,133.38	7.40	0.00	721.00	0.00	0.00	0.00	1,861.78
M	Tonnes	2,974.74	29.42	111.20	15.00	0.00	53.54	0.00	3,183.90
N	Tonnes	1007.19	131.85	394.08	349.44	0.00	0.00	0.00	1,882.55
R	Tonnes	48.67	10.40	90.93	192.17	8.64	178.98	0.00	529.79
T	Tonnes	271.76	30.94	0.00	3,066.48	0.00	0.78	0.00	3,369.96

Notes regarding Table 2:

Conversion to tonnes

Each tonnage figure represents the sum of waste amounts, as recorded by the waste receiver, across multiple relevant waste records. For many of the included waste amounts, no estimation is necessary to convert the amount to tonnes (e.g. if the amount on a given waste record is specified by the receiver as 1,000 kilograms, then no estimation is necessary to convert this amount to 1 tonne). However, for a subset of included waste amounts, an estimation is necessary to convert the amount to tonnes. Specifically:

- If the received amount is recorded as a volume (e.g. cubic metres or litres) or in equivalent passenger units (EPUs), then a conversion factor is applied to estimate the equivalent amount in tonnes,
- If the received amount has been recorded on a grouped waste record, then each record within the group is allocated an equal share of the group amount (e.g. if 10 waste records have been associated with a single grouped record that specifies the amount as 1 tonne, then each of the 10 waste records is allocated 0.1 tonne).

**Table 3: Discrepancies in movements of controlled waste into Victoria for the period
1 July 2021 to 30 June 2022 – Percentage of total movements**

Discrepancy Type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr *
Consignment non-arrival	1	N/A	0	0	0	1	0	0	0
Transport without authorisation	370	N/A	8	17	152	74	0	144	0
Non-matching documentation									
Waste data									

Notes regarding Table 3:Consignment non-arrival

- 'Consignment non-arrival' has been interpreted to mean: 'Waste movements from outside Victoria to inside Victoria that are not in status 'Draft', 'Cancelled', 'DoU', or 'Received'.'

Transport without authorisation

- 'Transport without authorisation' has been interpreted to mean waste movements that:
 - have been picked up from the producer's interstate site, destined for Victoria, in which the producer section (Part A) 'consignment authorisation' field is blank/empty, or
 - have been picked up from the producer's overseas site, destined for Victoria, in which the producer section (Part A) 'basel permit' field is blank/empty.
- In addition to the data quality issues noted above Table 2, the following data quality issue applies to the reported 'Transport without authorisation' figures. It is not possible to accurately report the number of unauthorised movements of controlled waste into Victoria from interstate or overseas due, in part, to
 - the fact that the authorisation status of most records of such movements has not been verified. Such verification would involve:
 - validation of each recorded consignment authorisation number and basel permit number, and
 - obtaining and validating the consignment authorisation number or basel permit number for all waste records in which it is required but unspecified.

Non-matching documentation

It is unclear what 'non-matching documentation' refers to. It is not possible to evaluate whether the requested information can be provided, nor to provide the requested information.

Non-matching waste data

It is not possible to accurately report the number of unique waste movements containing non-matching waste data. In addition to the data quality issues noted above Table 2, this is due to:

1. the absence of a method to report all detectable discrepancies in information across each section of each waste record, and
2. widespread under-reporting, by waste receivers, of required discrepancy information.

Further detail about issues 1 and 2 can be provided upon request.

**Table 4: Number of movements of controlled waste into Victoria for the period
1 July 2021 to 30 June 2022**

NSW	Vic	Qld	WA	SA	Tas	ACT	NT
1,129	N/A	87	216	361	89	0	193

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure for Queensland by Hon. Meaghan Scanlon MP, Minister for Environment and the Great Barrier Reef, Minister for Science, and Youth Affairs for the reporting year ended 30 June 2022.

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* (MCW NEPM) in Queensland. The MCW 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 MCW 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 MCW NEPM administration is integrated with intrastate tracking, controlled waste licensing and compliance activities in Queensland.

- DES has continued to administer the MCW 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 2021–22 was 592, which is a 75.67% increase from 2020–2021 (337). This increase in consignments was accompanied by a 66.51% increase in the amount of controlled waste transported into Queensland from other Australian States and Territories to 85,550.05 tonnes.
- These increases are attributed to the various interstate lockdowns associated with the COVID-19 pandemic, as well as the large-scale east coast flooding in early 2022.
- During 2021-2022, 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
2020–21	337
2021–22	592

Table 2: Quantity of controlled waste into Queensland for the period 1 July 2021 to 30 June 2022
– Tonnes per waste category by State/Territory

Code	Description	NSW	Vic	QLD	WA	SA	Tas	ACT	NT	Ext-Terr	Total
A	Plating & heat treatment	9									9
B	Acids	195.56				143.8					339.36
C	Alkalis	26.98							0.03		27.01
D	Inorganic chemicals	2,389.75	2.13						0.08		2,391.96
E	Reactive chemicals	95.93									95.93
F	Paints, resins, inks organic sludges	444.4	1.41						0.01		445.82
G	Organic solvents	2,736.38	22			352.8			0.13		3,111.31
H	Pesticides	153.81				183.16					336.97
J	Oils	60,846.60	39.26			1,885.76			2.55		62,774.17
K	Putrescible/ organic waste	5,450.23	71			2					5,523.23
L	Industrial washwater										0
M	Organic chemicals	645.59	789.7			68					1,503.29
N	Soil/ sludge	2,576.14						7			2,583.14
R	Clinical & pharmaceutical	1,055.30	0.09								1,055.39
T	Misc	5,001.56	166.66						23.51		5,191.73
State Totals (tonnes)		81,627.22	1,092.25		0	2,635.52	0	7	26.31	0	85,388.31

**Table 3: Discrepancies in movements of controlled waste into Queensland for the period
1 July 2021 to 30 June 2022 – 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	-	-	-	-	-	-

**Table 4: Number of movements of controlled waste into Queensland for the period
1 July 2021 to 30 June 2022**

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
525	13	n/a	7	12	2	5	26	

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 Department of Water and Environmental Regulation for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In Western Australia, the Department of Water and Environmental Regulation (DWER) 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 (Western Australia) Act 1996* and the *Western Australian Environmental Protection Act 1986*.
- The *Environmental Protection (Controlled Waste) Regulations 2004* (the Regulations) 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 Regulations following a review to ensure they are risk-based, streamlined and effective. Gazettal of the amendments are anticipated in early 2023.
- The number of consignment authorisations issued by Western Australia during the 2021–22 reporting year for the movement of waste into the state increased 43.5 per cent compared to 2020–21 (from 23 (revised) to 33).

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by Western Australia

Reporting Year	Consignment authorisations issued
2020–21	23r
2021–22	33

r revised data (revised up from 22 reported in 2020–21 NEPC Annual Report)

Table 2: Quantity of controlled waste into Western Australia for the period 1 July 2021 to 30 June 2022 – 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			8.51	n/a						8.51
B	Acids	1.89			n/a	409.71					411.60
C	Alkalis				n/a						0.00
D	Inorganic chemicals	58.93			n/a				21.00		79.93
E	Reactive chemicals	9.20			n/a						9.20
F	Paints, resins, inks organic sludges				n/a				58.67		58.67
G	Organic solvents				n/a						0.00
H	Pesticides				n/a						0.00
J	Oils				n/a				276.94		276.94
K	Putrescible / organic waste				n/a						0.00
L	Industrial washwater				n/a						0.00
M	Organic chemicals	21.98		205.45	n/a	20.00			230.58		478.01
N	Soil / sludge				n/a						0.00
R	Clinical & pharmaceutical				n/a						0.00
T	Misc.		19.25		n/a						19.25
State Totals (tonnes)		92.00	19.25	213.96	n/a	429.71	0.00	0.00	587.19	0.00	1342.11

Table 3: Discrepancies in movements of controlled waste into Western Australia for the period 1 July 2021 to 30 June 2022 – 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 2021 to 30 June 2022

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
7	2	14	n/a	34			44	

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. Susan Close, Minister for Climate, Environment and Water, for the reporting year ended 30 June 2022.

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 2021, South Australia as chair of the Controlled Waste NEPM Implementation Working Group, held an Implementation Working Group meeting (online) attended by states and territories to maintain consistency with other jurisdictions in the national tracking of controlled waste in a manner that underpins the desired environmental outcomes of the Measure.
- No implementation issues were reported during 2021–22.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by South Australia

Reporting Year	Consignment authorisations issued
2020–21	181
2021–22	168

Table 2: Quantity of controlled waste into South Australia for the period 1 July 2021 to 30 June 2022
– 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	n/a	0.00
B	Acids	0.00	5.22	0.00	0.00	n/a	0.00	0.00	2.00	n/a	7.22
C	Alkalis	0.00	9.97	0.00	0.00	n/a	0.00	0.00	0.00	n/a	9.97
D	Inorganic chemicals	14436.98	23123.00	0.00	22.52	n/a	80878.48	72.50	682.23	n/a	119215.71
E	Reactive chemicals	0.00	5.19	0.00	0.00	n/a	0.00	0.00	0.00	n/a	5.19
F	Paints, resins, inks organic sludges	2.66	542.22	0.00	0.00	n/a	0.00	0.00	5.00	n/a	549.87
G	Organic solvents	40.95	8.26	5.87	0.00	n/a	0.00	0.00	0.00	n/a	55.08
H	Pesticides	0.00	0.00	0.00	0.00	n/a	0.00	0.00	0.00	n/a	0.00
J	Oils	602.55	8.61	0.00	0.00	n/a	0.00	0.00	8.61	n/a	619.77
K	Putrescible/ organic waste	0.00	193.00	0.00	0.00	n/a	0.00	0.00	0.00	n/a	193.00
L	Industrial washwater	0.00	0.00	0.00	0.00	n/a	0.00	0.00	0.00	n/a	0.00
M	Organic chemicals	0.00	0.00	0.00	0.00	n/a	0.00	0.00	0.00	n/a	0.00
N	Soil/sludge	11547.02	13858.46	0.00	171.75	n/a	0.00	0.00	164.70	n/a	25741.92
R	Clinical & pharmaceutical	0.00	44.90	0.00	811.80	n/a	32.29	0.00	11.04	n/a	900.02
T	Misc.	84.87	0.00	0.00	0.00	n/a	0.00	0.00	2455.72	n/a	2540.59
State Totals (tonnes)		26715.02	37798.83	5.87	1006.07	0.00	80910.77	72.50	3329.30		149838.35

Table 3: Discrepancies in movements of controlled waste into South Australia for the period 1 July 2021 to 30 June 2022 – Percentage of total movements

Discrepancy Type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr *
Consignment non-arrival	24	47	69	71	n/a	13	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 2021 to 30 June 2022

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
753	1311	6	287	n/a	31	2	400	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 Hon. Roger Jaensch, Minister for the Environment and Climate Change for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

In Tasmania, the *National Environment Protection (Movement of Controlled Waste between States and Territories) Measure* (NEPM) is a state policy under the *State Policies and Projects Act 1993*. The key legislative instrument for implementation of the NEPM is the *Environmental Management and Pollution Control Act 1994*.

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

Tasmania receives controlled waste from Antarctica and Macquarie Island. This waste was previously reported by Tasmania as being received from an external territory. In July 2019, EPA Tasmania accepted the advice of the Australian Antarctic Division that these waste movements were not subject to the NEPM, and thus they have not been reported herein.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by {name of jurisdiction}

Reporting Year	Consignment authorisations issued
2020–21	2
2021–22	2

Table 2: Quantity of controlled waste into Tasmania for the period 1 July 2021 to 30 June 2022 – 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										
B	Acids										
C	Alkalis										
D	Inorganic chemicals		2869								2869
E	Reactive chemicals										
F	Paints, resins, inks organic sludges										
G	Organic solvents										
H	Pesticides										
J	Oils										
K	Putrescible/ organic waste										
L	Industrial washwater										
M	Organic chemicals										
N	Soil/sludge										
R	Clinical & pharmaceutical										
T	Misc.										
State Totals (tonnes)			2869								2869

Table 3: Discrepancies in movements of controlled waste into Tasmania for the period 1 July 2021 to 30 June 2022 – Percentage of total movements

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

Tasmania does not currently reconcile controlled waste tracking certificate data to allow the identification of discrepancies.

Table 4: Number of movements of controlled waste into Tasmania for the period 1 July 2021 to 30 June 2022

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
	162							

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 for the reporting year ended 30 June 2022

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* (the Act), Environment Protection Regulation 2005 and Hazardous Materials Environment Protection Policy 2022 made under the Act.

The NEPM has been fully implemented and operational in the ACT since March 2000 with no major issues identified with its operation. Regular contact has been maintained with other jurisdictions to ensure cooperative administration of the NEPM.

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.

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 the surrounding New South Wales regions/Victoria for the treatment of clinical waste by Cleanaway Daniels. During the reporting period Ampcontrol Services (NSW) Pty Ltd ceased trading in the ACT which will see the end of polychlorinated biphenyl (PCB) free contaminated oil movements into the ACT.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Table 1: Number of consignment authorisations issued by ACT

Reporting Year	Consignment authorisations issued
2020–21	58
2021–22	36

Table 2: Quantity of controlled waste into ACT for the period 1 July 2021 to 30 June 2022 – 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
B	Acids										0.00
C	Alkalis										0.00
D	Inorganic chemicals										0.00
E	Reactive chemicals										0.00
F	Paints, resins, inks organic sludges										0.00
G	Organic solvents										0.00
H	Pesticides										0.00
J	Oils	255.45									255.45
K	Putrescible/ organic waste	36.49									36.49
L	Industrial wash water										0.00
M	Organic chemicals										0.00
N	Soil/sludge	24.26									24.26
R	Clinical & pharmaceutical	41.62	464.16								505.78
T	Misc.										0.00
State Totals (tonnes)		357.82	464.16	0.00	0.00	0.00	0.00	0.00	0.00		821.98

Table 3: Discrepancies in movements of controlled waste into ACT for the period 1 July 2021 to 30 June 2022 – Percentage of total movements

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

Table 4: Number of movements of controlled waste into ACT for the period 1 July 2021 to 30 June 2022

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
254	110							

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 Minister for Environment, Climate Change and Water Security for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The key legislative instruments for the implementation of the NEPM in the Northern Territory are the *Waste Management and Pollution Control Act 1998* and the *Transport of Dangerous Goods by Road and Rail (National Uniform Legislation) Act 2010*. No significant issues are reported.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

See data provided in tables below.

Table 1: Number of consignment authorisations issued by Northern Territory

Reporting Year	Consignment authorisations issued
2020–21	13
2021–22	6

Table 2: Quantity of controlled waste into Northern Territory for the period 1 July 2021 to 30 June 2022 – 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
B	Acids										0.00
C	Alkalies										0.00
D	Inorganic chemicals										0.00
E	Reactive chemicals										0.00
F	Paints, resins, inks organic sludges										0.00
G	Organic solvents				1.00						1.00
H	Pesticides										0.00
J	Oils			2.50	1745.85				N/A		1748.35
K	Putrescible/ organic waste										0.00
L	Industrial washwater										0.00
M	Organic chemicals										0.00
N	Soil/sludge										0.00
R	Clinical & pharmaceutical										0.00
T	Misc.										0.00
State Totals (tonnes)		0.00	0.00	2.50	1746.85	0.00	0.00	0.00	0.00		1749.35

Table 3: Discrepancies in movements of controlled waste into Northern Territory for the period 1 July 2021 to 30 June 2022 – 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				13				n/a	

Table 4: Number of movements of controlled waste into Northern Territory for the period 1 July 2021 to 30 June 2022

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ext Terr*
		1	23				n/a	

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 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The Commonwealth implements the National Environment Protection (National Pollutant Inventory) Measure (NPI NEPM) administratively and ensures its obligations under the *National Environment Protection Act 1994* and *National Environment Protection Measures (Implementation) Act 1998* are met. The Commonwealth is responsible for data publication, the NPI website, and coordinating program delivery with states and territories through the NPI Intergovernmental Working Group.

On 31 March 2022, the Department of Agriculture, Water and the Environment published National Pollutant Inventory (NPI) data for 2020–21. This data details emissions from over 4000 industry facilities and represents the 23rd year of NPI publication of emissions from industry.

The Commonwealth managed work on the review of the NPI. The Commonwealth acknowledges the valuable contribution of states and territories towards the review. This work included:

- completing the National Pollutant Inventory review report 2021 in December 2021 and publishing the report in April 2022.
- chairing and providing secretariat support for 2 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 review report made 7 recommendations including areas for further investigation and opportunities to improve the program to better meet the needs and expectations of communities, regulated businesses and government regulators. It found that the NPI was largely meeting its intended outcomes, was relevant, and was broadly supported by stakeholders.

The adoption of stronger network security standards by modern web browsers and a lack of recent maintenance on the NPI Online Reporting System led to significantly disrupted access to the system for reporters and state and territory data administrators. The Commonwealth engaged IT experts to resolve the issue and restore system access. The Commonwealth acknowledges the extra efforts of states and territories during the disruption to complete their validation the 2020–21 facility data in time for publication on 31 March 2022.

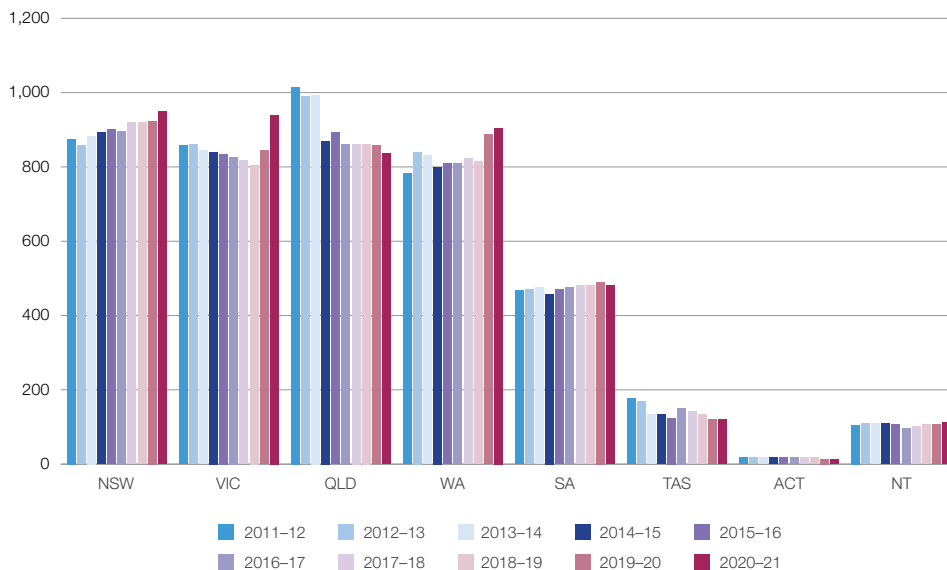
After operating the NPI website on the www.npi.gov.au domain for over 23 years, the Commonwealth moved its NPI web pages, to become part of the website for the Department of Climate Change, Energy, the Environment and Water. The migrated NPI web pages went live on www.dcceew.gov.au on 1 July 2022. The new hosting arrangement enable the Commonwealth to provide a more cost effective, modern, reliable and accessible experience for stakeholders.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

The Commonwealth published the 2020–21 National Pollutant Inventory (NPI) data on 31 March 2022. The number of facilities reporting to the NPI rose from 4,306 in 2019–20 to 4,381 in 2020–21.

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 2011–12



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		
207,173 sessions on website.	- The number of user sessions increased from 137,847 in the previous year. - Software errors in the NPI database frequently affected public users who searched on the data.	The Commonwealth responded to 18 information and support requests from the public.
Industry		
4,381 reports for 2021–22. 4,306 reports for 2020–21. 176 new reporters. - No new sectors reporting. - No confidentiality claims submitted.	Many industry users experienced compatibility issues with the NPI Online Reporting System. Facility operators that reported on a calendar-year reporting cycle experienced the biggest disruption when modern browsers adopted stricter network security standards.	- The Commonwealth launched a new Excel-based calculation tool to provide a more accessible and streamlined way for industry reporters to calculate emissions using NPI emission factors. - The Commonwealth responded to 43 requests from industry. Most industry reporters were referred to the relevant jurisdiction NPI team and a small number of requests were handled directly.
Government		
7 facilities from 2 Commonwealth departments reported to the NPI for 2020–21.	The Department of Climate Change, Energy, the Environment and Water used: - NPI emissions data as part of Australia's 5th National Report under the Stockholm Convention on Persistent Organic Pollutants. - NPI ammonia emissions data as part of Australia's Agri-environmental indicators reported to the OECD.	- The Commonwealth chaired and provided secretariat support for the NPI Review Steering Committee, holding 2 meetings and completing the National Pollutant Inventory review report 2021. - The Commonwealth published the National Pollutant Inventory review report 2021 in April 2022.

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. James Griffin MP, Minister for Environment and Heritage, for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

The New South Wales Department of Planning and Environment (DPE) 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 2022, including:

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

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

National Pollutant Inventory (NPI) facility emissions and transfers are reported for the 2020–21 reporting period. This is the most recent year for which facility reporting data has been finalised, provided by NSW to the Commonwealth and published by the Commonwealth.

DPE conducts online and face-to-face training as necessary 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 10 new reporters in 2020–21. DPE 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 New South Wales for the period 1 July 2020 to 30 June 2021

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 and community groups utilise NPI data where they identify environmental issues of concern. - 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		
943 reports for 2020–21 (compared to 924 reports for 2019–20). 10 new reporters in 2020–21. - No confidentiality claims submitted.	Training and support provided by DPE to facility reporters has improved data quality and reduced costs to NPI facility reporters.	- During 2020–21, DPE trained approximately 50 reporters by phone and online, including in use of the NPI online reporting system. - DPE has received ongoing requests from industry for training and guidance material on transfers of NPI substances in waste streams.
Government		
943 desktop audits of reports.	- DPE 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.	- DPE continues to utilise internal and inter-agency communications to inform DPE 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 Action and Solar Homes, for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

From 1 July 2021, the NPI NEPM in Victoria is implemented by the Environment Protection Regulations 2021. The regulations came into force, as subordinate legislation to the *Environment Protection Act 2017* which applied from the same date.

With the introduction of the Act, environment protection law shifted to a prevention-based approach. Central to this approach is the general environment duty. This is a shared responsibility to prevent harm to the environment and means all Victorians must each take reasonable steps to stop harm, and do so before damage is done.

Victoria's new environment protection legal framework means that the enforcement of NPI requirements is more straightforward and not complying with the NPI reporting requirements (including keeping records for 5 years) has become an infringeable offence.

Note that the data presented in this report is for the 2020–21 financial year as per the NEPM requirement.

EPA will continue raising the NPI data quality issue and the need for consistency of the program enforceability across all Australian jurisdictions with the NPI NEPM Review Steering Committee.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
Public		
The number of community member visits to the National Pollutant Inventory website is recorded by the Commonwealth.	No specific feedback was received from the community.	
Industry		
936 published reports for 2020/21. 19 submitted reports for 2020/21 were marked retained and not published. - Four 2020/21 NPI reports were submitted late (between April and November 2022), and not yet published.	- Some companies reported difficulties associated with using the all-in-one NPI calculation tool, caused by virus protection applications not compatible with the MS Excel Macros incorporated in the updated calculation tool. - Two NPI-specific audits were conducted in 2021/22.	95.4% of 2020/21 reports were submitted on time. 4.6% or 44 reports (incl. 41 financial year, two calendar year and one Japanese financial year report) for 2020/21 were more than one week late.

Participation levels	Feedback from the community, industry and government	Implementation activity effectiveness
- One additional 2020/21 NPI report submitted on time was considered of unsatisfactory quality and not published. 871 published 2019/20 reports and seven retained 2019/20 reports. 91 new reporting facilities. 0 confidentiality claims received.	NPI information was also provided to EPA operation officers as part of their licence compliance site visits and desk-top assessments.	- Four 2020/21 NPI reports were submitted to EPA after the 2020/21 report publication on 31/03/2022 and not yet published. 98% reports for 2020/21 were submitted online, the remaining 19 reports (or 1.98%) were submitted on paper.
Government		
504 reports for 2020/21 were individually assessed and corrected. - Two detailed audits of 2020/21 NPI reports. - Two Improvement Notices under section 271 of the <i>Environment Protection Act 2017</i>.	- No specific feedback was received from the government. - EPA previously used NPI data for air quality modelling; cross-checking licence compliance; prioritising compliance work; and to inform reviews of Victoria's Environment Protection Act 1970; Scheduled Premises Regulations; and Environment Protection (Vehicle Emissions) regulations.	

Queensland

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Queensland by 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 2022.

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.

The NPI Review Report 2021 was published in 2022 and has recommendations that have not been implemented to date. The online reporting system continues to have issues causing delays in processing reports.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Reporting for the 2021–22 reporting period (table 1) incorporates data from the 2020–21 year which was received on 30 September 2021 and validated in the 2021–22 financial year.

Table 1: Participation, feedback and effectiveness for Queensland

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Public		
The number of community member visits to the National Pollutant Inventory website is recorded by the Commonwealth.	8 news articles were circulated in the 2021–2022 year compared to 9 in the 2020–21 year.	NPI emissions and transfer reports were published through the Australian Government Open Data portal www.data.gov.au.
Industry		
887 reports for 2020–21 (848 published, 28 below threshold no emissions or transfers reported, 11 received too late for publication). 888 reports received for 2019–20 (861 published, 27 below threshold with no emissions or transfers reported). 20 new reporters. 0 new sectors reporting. 0 confidentiality claims submitted.	Issues with the NPI online reporting system continued both accessibility and timing out issues.	51% of facility reports were subject to desktop evaluation. - A data matching process was undertaken to match QLD licensed facilities to NPI reporting facilities and identify facilities that have a potential reporting requirement. - The first iteration of a PowerBI dashboard for validation purposes was developed.
Government		
437 desktop audits. 0 on-site audits. 0 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 second iteration of the NPI PowerBI dashboard was shared department wide and with federal and state NPI colleagues.

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (National Pollutant Inventory) Measure for Western Australia by the Department of Water and Environmental Regulation for the reporting year ended 30 June 2022.

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 *National Environment Protection Council (Western Australia) Act 1996*, the *Western Australian Environmental Protection Act 1986* and the *Environmental Protection (NEPM-NPI) Regulations 1998*.

The implementation of the NEPM continues to be successful in Western Australia.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

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 utilise National Pollutant Inventory NEPM data where environmental issues of concern are identified.	No public queries made to WA NPI relating to articles run by ABC News or Guardian Australia in 2021–22
Industry		
918 reports for 2020–21 898 reports for 2019–20 29 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 2020–21. - 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 with additional reporting information to that available on website.

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Government		
• 918 desktop audits. • 8 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. Susan Close, Minister for Climate, Environment and Water, for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In South Australia, the Environment Protection Authority (EPA) implements the National Environment Protection (National Pollutant Inventory) Measure through the *Environment Protection (National Pollutant Inventory) Policy 2008*.
- The findings of the third National Pollutant Inventory (NPI) review, initiated in 2018, was published in a report in 2022 following the work of South Australia and other jurisdictions involved with the NPI Intergovernmental Working Group and the Steering Committee formed to oversee the review. The key findings from the review relate broadly to outcomes, performance, and delivery. The review findings look to an enhanced value proposition for the future NPI that operates within a nimbler legislative arrangement, uses improved tools and processes to streamline operations, and provides an enhanced user experience.
- A detailed air emissions inventory remains a strategic priority for both the NPI program and the South Australian 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 undertaken in South Australia in 2003).
- South Australia strongly supports the ongoing 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

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 publication of the NPI Review Report.	- Prompt responses are made when NPI data is requested. - Participated in the GovHack 2021 open data competition as a data mentor.
Industry		
489 reports for 2020–21. 491 reports for 2019–20. 7 new reporters. 1 new sector reporting. - No confidentiality claims submitted.	- Online reporting training has been well received by industry. - Industry has expressed concern that the NPI emission calculation tools do not work with 64 bit version of Excel. The newly released 'all-in-one' calculation tool addresses this issue. - Industry has expressed concern that accessing the NPI website and online reporting system (ORS) raises security concerns with modern browsers. This issue prevented all users from accessing the ORS entirely in early 2022 for several months, until an updated ORS could be implemented. This impacted report submission and jurisdictional validation processes.	- 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 virtual 'drop in' sessions were held to support industry reporters
Government		
489 desktop audits. - No on-site audits. - No regulatory actions.	- The SA EPA utilises NPI data to implement the Resource Efficiency Component of its load based or 'polluter pays' licensing system. - NPI data are vital for developing air quality modelling to provide comprehensive, spatially distributed diffuse and industrial point pollutant emission data across all SA airsheds.	- Participation in the NPI Intergovernmental Working Group remains important for the discussion of policy, strategy and technical implementation details. - Participation in, and now implementing the recommendations of the NPI Review are 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 Hon. Roger Jaensch, Minister for the Environment and Climate Change for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The ongoing review of the NPI combined with the security and stability of the ORS have been a distraction from the administration of the program.
- Identifying and engaging with growth industries is a resource intensive activity particularly for high usage-low emission sectors such as alcoholic beverages, craft beer, wine and small-scale distilleries.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

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.	• No feedback received.	
Industry		
• 146 reports for 2021–22. • 141 reports for 2020–21. • 2 new reporters. • 0 new sectors reporting. • 0 confidentiality claims submitted.	• Further improvements made in sewage treatment plant reporting. • Improved reporting for co-generation facilities burning biogas from landfill facilities. • Security problems with the ORS delayed some reports being submitted.	Engaged with landfill operators to improve reporting from landfills and separation of co-generation facilities.
Government		
• 141 desktop audits. • 0 on-site audits. • 0 regulatory actions.	• NPI data is used to support assessment decisions for new or expanded developments relating to air emissions and community impacts.	

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 for the reporting year ended 30 June 2022

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

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		
• 17 reports for 2020–21. • 20 reports for 2019–20. • 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		
• 17 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 Minister for Environment, Climate Change and Water Security for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- The National Pollutant Inventory (NPI) program is implemented in the Northern Territory through the *Environment Protection (National Pollutant Inventory) Objective 2004* established under the *Waste Management and Pollution Control Act 1998*. Overall responsibility for implementation of the NPI rests with the Northern Territory Environment Protection Authority (NT EPA).
- Due to limited resourcing, reports were validated selectively based on evidence of significant emissions changes from previous years and facility size.
- The Northern Territory does not have sufficient funding to perform aggregate emissions data (AED) modelling as required by the NPI NEPM. AED includes diffuse sources of emissions such as fuel stations, motor vehicles and other non-road engines.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Participation Levels	Feedback from the Community, Industry and Government	Implementation Activity Effectiveness
Public		
• 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		
• 113 reports for 2021–22. • 109 reports for 2020–21. • 1 new reporter. • 0 new sectors reporting. • 0 confidentiality claims submitted.	• No reporters requested extension despite the COVID pandemic and the NPI Online Reporting System being offline for a few weeks. • 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		
• 65 desktop audits • 0 on-site audits • 0 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 the reporting year ended 30 June 2022.

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 Commonwealth 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 join the Covenant and contribute to meeting its goals.

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

Independent review of the co-regulatory arrangement for packaging

In 2021, an independent review of the NEPM and Covenant to evaluate the effectiveness of Australia's co-regulatory framework for packaging was completed.

This was the first comprehensive statutory review of the co-regulatory framework since it was first established in 1999. The review was informed by a detailed analysis of the federal, state and territory legislation and policies that underpin and provide for enforcement of the NEPM and Covenant, data on packaging consumption and recovery rates in Australia, a five-week stakeholder consultation period, and in-depth briefings and one-on-one interviews with key industry and government stakeholders, including APCO and all state and territory governments.

A review report provided to the Australian Government on 6 September 2021 broadly identified that, while the co-regulatory arrangement has some strengths, the NEPM is not fit-for-purpose and reform is needed to improve environmental outcomes for packaging. In particular, the review found that significant failures in the NEPM's implementation and enforcement since its establishment have created a lack of clarity for brand owners regarding their liability and obligations, enabled free riders, reduced industry confidence and participation in the Covenant, and resulted in limited or no data collection to measure and report on performance.

The review made nine recommendations to address these limitations and assist governments and industry to develop a reformed packaging scheme. The Australian Government is considering all recommendations and options for reform and will respond to the review in 2022.

Effectiveness of the Covenant

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 can be removed from the Register of Covenant 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.

Data provided by APCO indicates that as at 30 June 2022, there were 2,095 signatories to the Australian Packaging Covenant (Table 1). This was an increase of 644 signatories (44 per cent) from the previous reporting period.

Of the 2,095 signatories, 1,422 had obligations to submit an action plan (of which 1,168 or 82.13 per cent were compliant) and an annual report (of which 1,358 or 95.5 per cent were compliant).

Table 1: Number of Covenant signatories by year

Reporting Year	Number of Covenant signatories
2020–21	1,451
2021–22	2,095

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. James Griffin MP, Minister for Environment and Heritage, for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

Strategic and policy updates

In June 2021 the NSW Government released 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 is being invested over five years from 1 July 2022 into new programs and initiatives that minimise waste, value our resources, decarbonise our economy and kickstart the transition to a circular economy.

The Strategy sets out the NSW's 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
- reduce carbon emissions associated with the use and management of materials, including through stimulating the use of low-carbon recycled materials in the NSW economy
- build on the success of the \$802 million Waste Less, Recycle More initiative, continuing programs including business recycling and litter prevention.

The Plastics Action Plan demonstrates the strong action Government is taking to address the whole life cycle of plastic from production and consumption through to disposal, recovery and recycling. The four long-term outcomes set out in the plan aim to:

- reduce plastic waste generation
- make the most of our plastic resources
- reduce plastic leakage
- improve our understanding of the future of plastics.

In November 2021 the NSW Government passed the *Plastic Reduction and Circular Economy Act 2021*. The Act gives effect to the key commitment in the Action Plan, to phase out the supply of certain problematic single-use plastic items and set a design standard to prevent the supply of plastic microbeads in some rinse off personal care products. The items being phased out will stop almost 2.7 billion items of plastic litter from entering our natural environment and waterways over 20 years.

From 1 June 2022, the supply of lightweight plastic bags (35 microns or less) was banned. The phase out of other plastic items commences 1 November 2022. These items are single-use bowls, plates, cutlery, stirrers, straws (noting an exemption for use by people with a disability or medical need), and cotton buds; as well as expanded polystyrene food service items and microbeads in rinse-off personal care products.

Single-use plastic items not scheduled for phase out remain of concern, however, more work is needed to ensure sustainable alternatives are widely available. These include plastic spill-proof bowls and cups (and lids), oxo-degradable plastics, non-compostable fruit stickers, heavyweight plastic bags and barrier / produce bags. We will review these items and the available alternatives in 2024 (3 years from the passage of legislation) to determine whether a phase out is appropriate at that time.

The Action Plan also sets out the NSW Government's intention to make producers and brand owners more responsible for their packaging. Under the Plan, the NSW Government commits to levelling the playing field for packaging producers by requiring all eligible, non-Australian Packaging Covenant Organisation (APCO) member brand owners 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'. The Government will also review progress towards the 2025 Targets in 2024 (three years from release of the Action Plan). 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 their voluntary targets.

The NSW Government is currently developing a detailed policy to deliver this commitment.

Programs and initiatives

The NSW Government and Environment Protection Authority (EPA) are involved with a number of programs and initiatives to minimise the environmental impact of packaging, including:

- Working with the Australian Packaging Covenant Organisation to reduce the impacts of packaging waste through involvement in the APCO-led National Packaging Targets Implementation Working Group.
- Working with state and territory regulators as part of the Commonwealth-led:
 - NEPM Review Working Group
 - Compliance processes working group
 - Behaviour Change working group

Litter prevention

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 50 per cent since November 2017, primarily through the Return and Earn scheme. The community has embraced Return and Earn, with over 7 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 \$13 million for over 300 council, regional organisation 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 'Report a Tosser' campaign, now has over 66,500 registered community reporters and has resulted in over 50,600 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% reduction in litter volume.

An additional \$38 million has been allocated to litter prevention programs from 2022–2027. An updated Strategy for 2022–2030 is anticipated to be published in late 2022, to outline new programs and policies to reach new litter reduction targets as outlined in the Waste and Sustainable Materials Strategy 2041.

Container Deposit Scheme

The introduction of the Return and Earn scheme has had a significant and sustained positive impact on beverage container litter. Since its introduction in 2017, eligible CDS beverage container litter has fallen in both the number of items (by 54%) and in volume (by 52%).

Waste and Recycling Infrastructure

Remanufacture NSW provides \$35 million of co-funding for waste and recycling infrastructure to support industry to respond to the regulation of the export of glass, plastic, tyres and paper and cardboard under the *Recycling and Waste Reduction Act (Commonwealth) 2020*. This includes funding for companies to sort, recycle and reuse plastic packaging.

On 9 August 2021, 19 successful Round 1 projects were awarded \$21.5 million. This includes almost \$500,000 for VIP Packaging to incorporate 30% recycled post-consumer high volume high-density polyethylene (HDPE) into new packaging for industrial and personal care packaging products such as laundry and hair care bottles.

Round 2 offering the remaining \$13.5 million closed for applications on 1 April 2022. Assessment of applications is being finalised by the Environmental Trust.

Business Recycling

The Business Recycling Bin Trim Program worked with small and medium businesses to provide free waste assessments, identifying and implementing changes to improve their waste management practices.

Bin Trim Round 4 began in June 2020 and closed in April 2022 providing \$5,086,396 to 22 grantees and assessed 8,040 businesses to divert 41,206 tonnes. 112 recycling equipment rebates were provided in 2021/22 resulting in a diversion from landfill of 23,812 tonnes.

Pilot projects commenced in March 2022 to assist businesses to reduce plastic and increase recyclability of packing in their supply chains. One project focused on packaging in the wholesale distribution and retail supply chain of consumer goods brands in NSW; and the other project focused on packaging in a regional food supply chain with food producers, wholesalers, retailers, restaurants and cafes. Final project reports are due late 2022.

The Circulate Industrial Ecology Program provided \$629,318 to six innovative, commercially oriented industrial ecology projects targeting used packaging. Three projects were completed and diverted over 2,000 tonnes of waste from landfill. Three projects are expected to finish in FY 2022–23.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

In NSW, the Used Packaging Materials NEPM is currently supported through Part 8 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation). For the year ending 30 June 2022, the EPA set the following targets for recovery of materials and review of packaging design, in accordance with clause 86 of the Waste Regulation:

- 85% recovery of all materials used in packaging products up to and including 30 June 2022
- 100% of new and existing packaging must be reviewed using the Sustainable Packaging Guidelines.

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
2021–22	823

During 2021–22 APCO's regular Brand Audit identified 958 Brand Owners in NSW that were potentially liable under the NEPM. Of these, 159 Brand Owners became signatories to the packaging Covenant as a direct result of the audit (ending December 2021).

In March 2022, 799 potential Brand Owners were referred to the NSW EPA for further engagement, largely due to not responding to the Brand Audit letters sent by APCO. Of these:

- 249 brand owners had declared to APCO that they are not liable under the NEPM
- 32 brand owners indicated they would opt for direct regulation by the NSW EPA

For the remaining businesses, the EPA will prioritise engagement with brand owners with over \$50 million annual turnover, as feedback from APCO indicated that larger businesses represent a higher risk to the Packaging Covenant operations.

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, while transitioning to new programs and initiatives that support a circular economy.

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 Action and Solar Homes for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

Key change: From 1 July 2021 the NEPM is implemented in Victoria through Part 4.3 of the new *Environment Protection Regulations 2021* (EP Regs).

Regulation 99 of EP Regs states brand owner must provide a report to the Authority prior to 30 September each year, thus requiring EPA commence implementation of reporting processes in the last quarter of 2021–22 in preparation of the due date for reporters in the first quarter of 2022–23.

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 2022, there were 2095 signatories to the Covenant nationally. Victoria has 791 signatories, accounting for 38% of all signatories. There were 664 brand owners referred to Victoria as a result of the brand audit process undertaken by APCO in 2021. These are brand owners that have failed to become signatories to the covenant and have their registered head office located in Victoria.

Reporting Year	Number of Vic covenant signatories	Number of non-signatories (referred to Victoria)
2019–20	545	
2020–21	568	
2021–22	791	664

EPA is undertaking an inform and educate engagement approach to brand owners referred to Victoria under the 2018 Brand Audit. These brand owners are viewed as having a greater state of knowledge (given the time between contact in 2018 to now) without taking any action to become signatories to the covenant. The mark up in signatories this year compared to 2020–21 could be contributed to our proactive engagement campaign, encouraging non signatories to become APCO members.

Recovery Data

In this period, EPA Victoria's Compliance Reporting team commenced the design and development of a compliance program that will be responsible for the implementation of obtaining required annual reports with recovery data as per Clause 16.

A prioritisation methodology was applied to target 180 Brand Owners from Victoria's Brand Audit Referral list (2018 and 2021 Brand Audits). These brand owners received initial correspondence from EPA in June 2022 (in preparation for the Sept 30 reporting due date). Responses were required in an attached template by 30 June on Brand Owner intention to either:

- a) Commence procedure to become a signatory to the covenant via APCO membership.
- b) Report through EPA Victoria subject to obligations under Part 4.3 of the EP Regs.
- c) Provide evidence that company is exempt as you are not a liable brand owner, have an annual turnover of less than \$5 million, ceased trading or has been acquired, or part of another arrangement that produces equivalent outcomes to those achieved by the Australian Packaging Covenant.

Supporting Data

Nil.

Complaints, Investigations and Prosecutions

Nil

Statement of Interpretation of the Information

Nil

Local Government Data

Local government recycling data is published on Recycling Victoria's website:
[Victorian local government waste data dashboard | Victorian Government \(www.vic.gov.au\)](#).

Queensland

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Queensland by the Hon. Meaghan Scanlon is the Minister for the Environment and the Great Barrier Reef and Minister for Science and Youth Affairs for the reporting year ended 30 June 2022.

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.

The UPM NEPM is given regulatory effect in Queensland through provisions of the Waste Reduction and Recycling Regulation 2011.

On 1 September 2021 Queensland's ban on single-use plastic items commenced. This ban covers single-use plastic straws, stirrers, plates, unenclosed bowls and cutlery, and takeaway expanded polystyrene food containers and cups.

In December 2021 the Queensland Government announced a 10-year \$1.1 billion Recycling and Jobs Fund, aimed at improving recycling and resource recovery infrastructure across Queensland. Funding is also available for education and behaviour change initiatives aimed at helping reduce contamination in the recycling bin and improving recycling rates.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

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

Reporting Year	Number of covenant signatories
2020–21	142
2021–22	153

Queensland continues to work with the Australian Packaging Covenant Organisation to identify potential brand owners and to ensure that signatories to the Covenant continue to meet their obligations.

Recovery Data

There are currently no brand owners reporting direct to the Department of Environment and Science.

Supporting Data

In August 2015, a meeting of jurisdictions and industry resolved that jurisdictions would no longer carry out the brand owner audits. From 1 July 2016, this became the responsibility of industry, through the Australian Packaging Covenant Organisation.

Complaints, Investigations and Prosecutions

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

Statement of Interpretation of the Information

Queensland has been working with all other jurisdictions through the Government Officials Group to pursue a consistent approach to the application of the NEPM objectives and obligations to ensure consistency across all jurisdictions.

Local Government Data

Local government data for the 2021-2022 reporting period will be available in the annual Recycling and Waste in Queensland Report 2021, published on the Queensland Government website (<https://www.qld.gov.au/environment/management/waste/recovery/data-reports/recycling-waste>)

Western Australia

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Western Australia by the Department of Water and Environmental Regulation for the reporting year ended 30 June 2022.

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 (DWER) under the *Protection Council (Western Australia) Act 1996*, the *Western Australian Environmental Protection Act 1986* and the *Environmental Protection (NEPM-UPM) Regulations 2013*.

In late 2021–22, DWER received a referral of 160 brand owners that were not signatories to the Australian Packaging Covenant.

DWER, consistent with the approach in other states, is encouraging non-signatories to join the covenant or advise why they are not signatories.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

No compliance activity has been undertaken during the reporting period, however, DWER officers have attended regular compliance meetings as part of the Government Officials Group to harmonise compliance with other jurisdictions.

Reporting Year	Number of covenant signatories
2020–21	101
2021–22	140

Recovery Data

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

Supporting Data

Not applicable.

Complaints, Investigations and Prosecutions

No complaints were received, or investigated or prosecutions undertaken, during the 2020–21 and 2021–22 reporting period.

Statement of Interpretation of the Information

Not applicable.

Local Government Data

Local government data for 2020–21 is available at www.wasteauthority.wa.gov.au. Data for 2021–22 will be available from June 2023.

South Australia

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for South Australia by the Hon. Susan Close, Minister for Climate, Environment and Water for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

- In 2021–22, 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 commenced a Behaviour Change Program and the NEPM review under the NEPM including:
 - implementation of the Behaviour Change Program for brand owners under the NEPM;
 - final report on the Review of the Co-regulatory Arrangement under the NEPM including recommendations delivered;
 - development of a national data base for brand owners;
 - implementation of a NEPM Review working group to develop and implement a roadmap for a co-designed model for a nationally consistent reformed scheme.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

- During 2021–22 South Australia has continued to work with APCO and the GOG to implement the Behaviour Change Program which resulted in a significant increase in the number of South Australian brand owners becoming signatories to the Covenant.

Reporting Year	Number of covenant signatories
2020–21	83
2021–22	109

Recovery Data

- There are currently no brand owners reporting to the EPA in South Australia and, therefore, no requirements for audits under clause 16 of the *National Environment Protection (Used Packaging Materials) Measure*. The implementation of the Behaviour Change Program commenced during 2022 to encourage brand owners that are not meeting their obligations under the NEPM to either become signatories to the Covenant or be monitored for compliance by the EPA under the South Australian *Environment Protection (Used Packaging Materials) Policy 2012*.

Supporting Data

- The development of a national approach will provide a more effective way forward for pursuing brand owners identified under the 2018 and 2021 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 and the development and implementation of a roadmap for a nationally consistent reformed scheme under the NEPM.
- Implementation of the program continues throughout 2022 with the EPA commencing a priority sector-based engagement approach with South Australian brand owners who have not become a member of the Covenant.

Local Government Data

- Available at [2021-22 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 2022.

Tasmania

Report to the NEPC on the implementation of the National Environment Protection (Used Packaging Materials) Measure for Tasmania by Hon Roger Jaensch Minister for the Environment and Climate Change for the reporting year ended 30 June 2022.

PART 1—IMPLEMENTATION OF THE NEPM AND ANY SIGNIFICANT ISSUES

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

Implementation Issues Arising

Nil.

PART 2—ASSESSMENT OF NEPM EFFECTIVENESS

Reporting Year	Number of covenant signatories
2020–21	15
2021–22	20

Recovery Data

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

Supporting Data

No surveys pursuant to clause 18 were completed during the reporting period.

Complaints, Investigations and Prosecutions

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

Statement of Interpretation of the Information

Not applicable.

Local Government Data

Table 1: Amounts of materials collected at the kerbside, sent for secondary use/energy recovery and contamination (waste) disposed of to landfill 1 July 2021—30 June 2022

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		20,702	
Total non packaging paper i.e. paper mixed, paper white office, newspaper and magazines		1,317	
Total glass		15,512	
Total plastic		2,887	
Total aluminium (cans)		735	
Total steel (cans, tins etc.)		1660	
TOTAL	49,751	42,813	0

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 for the reporting year ended 30 June 2022

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), developed a webinar. This is 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.
- To help improve the efficacy of the UPM NEPM, the ACT Government has participated in GOG working group meetings held by the Commonwealth Government in relation to the independent review of the UPM NEPM and Australian Packaging Covenant. The ACT Government awaits the response of the Commonwealth Government to the recommendations of the review.
- The ACT has also taken significant steps to reduce plastic waste through the Plastic Reduction Act 2021. Banned single-use plastics include drink stirrers, cutlery, straws, expanded polystyrene containers for serving food and beverages, cotton buds with plastic sticks and oxo-degradable plastics.
- 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 2021–22 reporting period, 12 brand owners were referred to the ACT Government by APCO as non-compliant as part of the 2021 brand owner audit process. Engagement has not commenced with non-compliant brand owners headquartered in the ACT.

Supporting Data

No retailer survey of packaged products was conducted in the ACT in 2021–22.

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 2021–22 with respect to the UPM NEPM.

Statement of Interpretation of the Information

In 2021–22 the ACT continued to work with the community and industry to encourage waste avoidance and increase recycling and resource recovery rates.

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. The 2021–22 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 Minister for Environment, Climate Change and Water Security for the reporting year ended 30 June 2022.

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
2020–21	1
2021–22	1

Recovery Data

A total of 136,142,198 permitted beverage containers were sold in the Northern Territory during 2021–22. Of these, 101,777,826 containers were returned by a collection depot to a CDS coordinator. This equates to 75% of all containers sold that were returned, recycled and reused through the CDS, thereby diverted from landfill and litter. This is a 5% increase in return rate over the 2020–21 period.

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 2021–22, 246 tonnes of cardboard were recovered and recycled by landfills in the NT. This data relates to licensed landfills which service over 80% of the NT.

In addition, 6192 tonnes of material was recovered and recycled through the NT’s container deposit scheme including 4897 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	721	81
PET	492	55
HDPE	26	30
Glass	4,897	99
LPB	47	50
Steel	6	55
other	3	0
Total	6,192	75

Complaints, Investigations and Prosecutions

Nil

Statement of Interpretation of the Information

N/A

Local Government Data

See above



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