National Environment Protection (Ambient Air Quality) Measure

made under subsection 14(1) of the

National Environment Protection Council Act 1994 (Cwlth), *National Environment Protection Council (New South Wales) Act 1995* (NSW), *National Environment Protection Council (Victoria) Act 1995 (*Vic), *National Environment Protection Council (Queensland) Act 1994* (*Qld)*, *National Environment Protection Council (Western Australia) Act 1996* (WA), *National Environment Protection Council (South Australia) Act 1995* (SA), *National Environment Protection Council (Tasmania) Act 1995 (*Tas), *National Environment Protection Council Act 1994 (*ACT) and the *National Environment Protection Council (Northern Territory) Act 1994* (NT)

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Introductory Note

Section 14 of the *National Environment Protection Council Act 1994* and the equivalent provision of the corresponding Act of each participating State and Territory provides for the making of Measures by the National Environment Protection Council and the matters to which they may relate. This Measure relates to ambient air quality (section 14 (1) (a)).

The Measure is to be implemented by the laws and other arrangements participating jurisdictions consider necessary: see section 7 of the Commonwealth Act and the equivalent provision of the corresponding Act of each participating State and Territory.

Part 1 Preliminary

1 Citation

This Measure may be cited as the National Environment Protection (Ambient Air Quality) Measure.

Note This Measure commences on gazettal: see *National Environment Protection Council Act 1994*, s 21 and *Acts Interpretation Act 1901*, s 48 as applied by s 46A.

2 Definitions

(1) This clause defines particular words and expressions used in this Measure.

(2) The words and expressions indicated by an asterisk are defined in the Commonwealth Act and are included for information only to assist readers of the Measure. Minor changes from the definitions in the Commonwealth Act are indicated by square brackets ([ ]).

(3) In this Measure:

***Agreement** means the agreement made on 1 May 1992 between the Commonwealth, the States, the Australian Capital Territory, the Northern Territory and the Australian Local Government Association, a copy of which is set out in the Schedule [to the Commonwealth Act].

***ambient air** means the external air environment, it does not include the air environment inside buildings or structures.

***Commonwealth Act** means the *National Environment Protection Council Act 1994* of the Commonwealth.

***Council** means the National Environment Protection Council established by section 8 of the Commonwealth Act and the equivalent provision of the corresponding Act of each participating State and Territory.

Fire management means all activities associated with the management of fire prone land, including the use of fire to meet land management goals and objectives.

monitoring station means a facility for measuring the concentration of one or more pollutants in the ambient air in a region or sub-region.

****national environment protection goal*** means a goal:

(a) that relates to desired environmental outcomes; and

(b) that guides the formulation of strategies for the management of human activities that may affect the environment.

****national environment protection protocol*** means a protocol that relates to the process to be followed in measuring environmental characteristics to determine:

(a) whether a particular standard or goal is being met or achieved; or

(b) the extent of the difference between the measured characteristic of the environment and a particular standard or a particular goal.

****national environment protection standard*** means a standard that consists of quantifiable characteristics of the environment against which environmental quality can be assessed.

****participating jurisdiction*** means the Commonwealth, a participating State or a participating Territory.

****participating State*** means a State:

(a) that is a party to the Agreement; and

(b) in which an Act that corresponds to [the Commonwealth] Act is in force in accordance with the Agreement.

****participating Territory*** means a Territory:

(a) that is a party to the Agreement; and

(b) in which an Act that corresponds to [the Commonwealth] Act is in force in accordance with the Agreement.

particles as PM_{10} means particulate matter with an equivalent aerodynamic diameter of 10 micrometres or less.

performance monitoring station means a monitoring station used to measure achievement against the goal.

pollutant means a pollutant mentioned in Schedule 1.

ppm means parts per million by volume.

region means an area within a boundary surrounding population centres as determined by the relevant participating jurisdiction.

sub-region means a populated area within a region whose air quality differs from other areas in the region due to the topography, meteorology and sources of pollutants.

µg/m^3 means microgram per cubic metre referenced to a temperature of 0 degrees Celsius and an absolute pressure of 101.325 kilopascals.

3 Application

Participating jurisdictions must establish monitoring procedures, and commence assessment and reporting in accordance with the Protocol in this Measure, within 3 years after its commencement.

Part 2 National environment protection goal

4 Purpose of Part

The purpose of this Part is to set out a goal:

(a) that relates to the desired environmental outcomes; and

(b) that guides the formulation of strategies for the management of human activities that may affect the environment.

5 Desired environmental outcome

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

6 National environment protection goal

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

Part 3 National environment protection standards

7 Purpose of Part

The purpose of this Part is to set standards that consist of quantifiable characteristics of the air against which ambient air quality can be assessed.

8 National environment protection standards

(1) The national environment protection standards of this Measure are the standards set out in Schedule 2.

(2) For each pollutant mentioned in Schedule 2, the standard for an averaging period mentioned in the Schedule is the concentration in column 4.

Part 4 National environment protection protocol

9 Purpose of Part

The purpose of this Part is to set out the processes to be followed in measuring the concentration of pollutants in the air to determine:

(a) whether the standards of this Measure are being met; or

(b) the extent of the difference between the measured concentration of pollutants in the air and the standards.

10 Monitoring plans

(1) Each participating jurisdiction must ensure that a monitoring plan consistent with this Part is prepared setting out how the jurisdiction proposes to monitor air quality for the purposes of this Measure.

(2) Each monitoring plan must be submitted to Council.

11 Methods of measuring and assessing concentration of pollutants

For the purpose of evaluating performance against the standards the concentration of pollutants in the air:

(a) is to be measured at performance monitoring stations; or

Note Because the concentrations of different pollutants vary across a region, it would not be necessary or appropriate to co-locate the measuring instrumentation for all pollutants at each performance monitoring station.

(b) is to be assessed by other means that provide information equivalent to measurements which would otherwise occur at a performance monitoring station.

Note These methods could include, for example, the use of emission inventories, windfield and dispersion modelling, and comparisons with other regions.

12 Accreditation of performance monitoring

(1) Subject to subclause (2) the operator of a performance monitoring station must be accredited by the National Association of Testing Authorities.

(2) The operator may apply an equivalent system for ensuring adequate monitoring, quality assurance, and validation procedures.

13 Location of performance monitoring stations

(1) To the extent practicable, performance monitoring stations should be sited in accordance with the requirements for Australian Standard AS2922-1987 (Ambient Air-Guide for Siting of Sampling Units). Any variations from AS2922-1987 must be notified to Council for use in assessing reports.

(2) Performance monitoring station(s) must be located in a manner such that they contribute to obtaining a representative measure of the air quality likely to be experienced by the general population in the region or sub-region.

(3) A performance monitoring station should be operated in the same location for at least 5 years unless the integrity of the measurements is affected by unforeseen circumstances.

14 Number of performance monitoring stations

(1) Subject to sub-clauses (2) and (3) below, the number of performance monitoring stations for a region with a population of 25,000 people or more must be the next whole number above the number calculated in accordance with the formula:

$$1.5P + 0.5$$

where ***P*** is the population of the region (in millions).

(2) Additional performance monitoring stations may be needed where pollutant levels are influenced by local characteristics such as topography, weather or emission sources.

(3) Fewer performance monitoring stations may be needed where it can be demonstrated that pollutant levels are reasonably expected to be consistently lower than the standards mentioned in this Measure.

15 Trend stations

(1) A number of performance monitoring stations in each participating State and participating Territory must be nominated as trend stations.

(2) The number of performance monitoring stations to be nominated as trend stations must be sufficient to monitor and assess long term changes in ambient air quality in different parts of the jurisdiction.

(3) A trend station must be operated in the same location for one or more decades.

16 Monitoring methods

(1) Subject to subclauses (2) and (3) the Australian Standard Methods set out in Schedule 3 should be used for monitoring pollutants in the air.

(2) Where an Australian Standard Method has not yet been developed for a monitoring method, appropriate internationally recognised methods or standards may be used that provide equivalent information for assessment purposes.

(3) Other monitoring methods may be used if:

(a) calibration and validation studies show:

(i) the accuracy and precision of the other method; and

(ii) the method can be compared with the relevant Australian Standard Method; and

(b) the equipment used is calibrated to the standard required by the equipment manufacturer; and

(c) the equipment provides equivalent information for assessment purposes.

17 Evaluation of performance against standards and goal

(1) Each participating jurisdiction must evaluate its annual performance as set out in this clause.

(2) For each performance monitoring station in the jurisdiction or assessment in accordance with subclause 11(b) there must be:

(a) a determination of the exposed population in the region or sub-region represented by the station; and

(b) an evaluation of performance against the standards and goal of this Measure as:

(i) meeting; or

(ii) not meeting; or

(iii) not demonstrated.

(3) Jurisdictions may provide an evaluation of a region as a whole against the standards using appropriate methodologies that provide equivalent information for assessment purposes.

(4) Performance must be evaluated as "not demonstrated" if there has been no monitoring or no assessment by an approved alternative method as provided in clause (11).

18 Reporting

(1) Each participating jurisdiction must submit a report on its compliance with the Measure in an approved form to Council by the 30 June next following each reporting year.

(2) In this clause ***reporting year*** means a year ending on 31 December.

(3) The report must include:

(a) the evaluations and assessments mentioned in clause 17; and

(b) an analysis of the extent to which the standards of this Measure are, or are not, met in the jurisdiction; and

(c) a statement of the progress made towards achieving the goal.

(4) The description of the circumstances which led to exceedences, including the influence of natural events and fire management, must be reported to the extent that such information can be determined.

(5) A report for a pollutant must include the percentage of data available in the reporting period.

Schedule 1 Pollutants

Carbon monoxide	Sulfur dioxide
Nitrogen dioxide	Lead
Photochemical Oxidants (as Ozone)	Particles

Schedule 2 Standards and Goal

Table 1: Standards and Goal for Pollutants other than Particles as $PM_{2.5}$

Column 1 Item	Column 2 Pollutant	Column 3 Averaging period	Column 4 Maximum concentration	Column 5 Goal within 10 years Maximum allowable exceedences
1	Carbon monoxide	8 hours	9.0 ppm	1 day a year
2	Nitrogen dioxide	1 hour	0.12 ppm	1 day a year
		1 year	0.03 ppm	none
3	Photochemical oxidants (as ozone)	1 hour	0.10 ppm	1 day a year
		4 hours	0.08 ppm	1 day a year
4	Sulfur dioxide	1 hour	0.20 ppm	1 day a year
		1 day	0.08 ppm	1 day a year
		1 year	0.02 ppm	none
5	Lead	1 year	0.50 µg/m^3	none
6	Particles as PM_{10}	1 day	50 µg/m^3	5 days a year

For the purposes of this Measure the following definitions shall apply:

(1) Lead sampling must be carried out for a period of 24 hours at least every sixth day.

(2) Measurement of lead must be carried out on Total Suspended Particles (TSP) or its equivalent.

(3) In Column 3, the averaging periods are defined as follows:

1 hour	clock hour average
4 hour	rolling 4 hour average based on 1 hour averages
8 hour	rolling 8 hour average based on 1 hour averages
1 day	calendar day average
1 year	calendar year average

(4) In Column 5, the time periods are defined as follows:

day	calendar day during which the associated standard is exceeded
year	calendar year.

(5) All averaging periods of 8 hours or less must be referenced by the end time of the averaging period. This determines the calendar day to which the averaging periods are assigned.

(6) For the purposes of calculating and reporting 4 and 8 hour averages, the first rolling average in a calendar day ends at 1.00 am, and includes hours from the previous calendar day.

(7) The concentrations in Column 4, are the arithmetic mean concentrations.

Schedule 3 Australian Standards Methods for Pollutant Monitoring

Pollutant	Method title	Method number
Carbon monoxide	Determination of Carbon Monoxide-Direct Reading Instrumental Method	AS3580.7.1-1992
Nitrogen dioxide	Determination of Oxides of Nitrogen-Chemiluminescence Method	AS3580.5.1-1993
Photochemical oxidants (as ozone)	Determination of Ozone-Direct Reading Instrumental Method	AS3580.6.1-1990
Sulfur dioxide	Determination of Sulfur Dioxide-Direct Reading Instrumental Method	AS3580.4.1-1990
Lead	Determination of Particulate Lead-High Volume Sampler Gravimetric Collection-Flame Atomic Absorption Spectrometric Method	AS2800-1985
	Determination of Total Suspended Particulates (TSP) - High Volume Sampler Gravimetric Method	AS2724.3-1984
Particles as PM_{10}	Determination of Suspended Particulate Matter-PM_{10} High Volume Sampler with Size Selective Inlet-Gravimetric Method	AS3580.9.6-1990
	Determination of Suspended Particulate Matter-PM_{10} Dichotomous Sampler-Gravimetric Method	AS3580.9.7-1990