

The Inconsistency and Implications of the Adoption of Ambient Air Quality NEPM 2021 Pollutant Standards as State Government Regulatory Policy

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Overview

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Introduction & Why

- Adoption of AAQ NEPM standards as impact assessment criteria in contradiction to their stated intent
- Not a new concept (for most air quality consultants)
- Unclear and contradictory for industry
- Good intentions, significant implications
- Opportunities for improvement in communication and mechanics

“If you can’t explain it simply, you don’t understand it well enough.”

Albert Einstein

“Clear is kind. Unclear is unkind.”

Brené Brown

AAQ NEPM 2021: What Changed?

Pollutant	Avg Period	2015 AAQ NEPM	2021 AAQ NEPM	Change
Ozone	1 hour	0.1 ppm	-	Removed
	4 hour	0.08 ppm	-	Removed
	8 hour	Established 2021	0.065 ppm	New standard
Nitrogen Dioxide	1 hour	0.12 ppm	0.08 ppm	- 33%
	Annual	0.03 ppm	0.015 ppm	- 50%
Sulfur Dioxide	1 hour (from 2021)	0.2 ppm	0.1 ppm	- 50%
	1 hour (from 2025)	0.2 ppm	0.075 ppm	- 62.5%
	24 hour	0.08 ppm	0.02 ppm	- 75%
	Annual	0.02 ppm	-	Removed
PM2.5	24 hour	Standard: 25 µg/m ³	Standard: 25 µg/m ³ Goal: 20 µg/m³ (2025)	Added “Goal”
	Annual	Standard: 8 µg/m ³	Standard: 8 µg/m ³ Goal: 7 µg/m³ (2025)	Added “Goal”

Purpose of AAQ NEPM



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Air Toxics

Ambient Air Quality

Assessment of Site Contamination

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Movement of Controlled Waste

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Publications

Proposed variation to the National Environment Protection (Ambient Air Quality) Measure standards for ozone, nitrogen dioxide and sulfur dioxide

The public consultation period for the Impact Statement and draft varied measure is now closed.
Documents remain available for reference only.

The National Environment Protection (Ambient Air Quality) Measure (Ambient Air Quality NEPM) establishes national ambient air quality standards and a national framework for the monitoring and reporting of six common air pollutants, including ozone (O₃), nitrogen dioxide (NO₂) and sulfur dioxide (SO₂).

The National Environment Protection Council (NEPC) has released an impact statement and draft variation to the Ambient Air Quality NEPM in relation to its standards for O₃, NO₂ and SO₂.

- [Australian Government Gazette notice](#)

The [2011 review of the Ambient Air Quality NEPM](#) provided recommendations in relation to the standards for O₃, NO₂ and SO₂ including revising the standards to take into account new evidence around the health effects of these air pollutants.

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Purpose of AAQ NEPM

Chapter 2 of the **Impact Statement** (NEPC):

*“The AAQ NEPM does not compel or direct pollution control measures. **It is not directly enforceable on industry**”.*

*“The AAQ NEPM standards are designed for locations that are **generally representative** of the level of exposure of the broad population, **rather than for ‘hot spots’ near major point sources or roads.**”*

*“Jurisdictions may employ complementary methods to support their air quality management frameworks. **This could include setting design goals and/or licence conditions on industrial premises.**”*

AAQ NEPM Supporting Documentation

Question and Answer Fact Sheet (NEPC):

Q15. I live in an area that is impacted by air pollution. How will changes to the AAQ NEPM improve air quality for me?

*The AAQ NEPM provides national standards for jurisdictions to **monitor and publicly report** on air pollution. Changes to the standards will provide more stringent **targets**, which jurisdictions may consider implementing.*

...

...

Emissions from point sources, such as industrial facilities, that affect a localised area are addressed by state based arrangements, such as works approvals or licence conditions imposed on industry to keep emissions at acceptable levels.

AAQ NEPM Supporting Documentation

Air Quality Study (Pacific Environment, 2018) included as Appendix A

*“In summary, achieving compliance with the proposed air quality standard for SO₂, NO₂ and O₃ will typically require the introduction of new abatement measures. The **Abatement Package** determined and agreed through the multi-criteria analysis (MCA) is **found to be generally inadequate to bring about universal compliance** with the reviewed alternative standard options.”*

Health Risk Assessment (DLA Environmental Services, 2018) included as Appendix B

*SO₂ data are collected in some regional centres with large industrial sources. As the main influence in these areas was usually a single industrial source, which was subject to jurisdictional air quality management and licensing requirements, the areas **were considered not to be the focus of the AAQ NEPM and were therefore excluded from the assessment.**”*

How States Have Adopted the Standards

Queensland: Environment Protection (Air) Policy 2019 (as amended 2024)

- NEPM 2021 standards for O₃, NO₂ and SO₂
- NEPM 2021 **goals** for PM_{2.5}.

Explanatory Notes (QLD Government, 2024):

- *“The objective ... is to amend the air quality objectives ... to ensure Queensland remains **consistent** with the national standards under the AAQ NEPM.”*

Summary Impact Analysis Statement (QLD Government, 2024):

- Aligning: negligible costs for government and existing industry
- Not aligning: **desired outcomes of NEPM** are not met
- Not aligning: QLD **inconsistent** with other jurisdictions and national framework
- Industry will not need to proactively adjust to the new criteria as operating sites hold permits

How States Have Adopted the Standards

NSW: Approved Methods (2022) and the Draft Approved Methods (2026)

- Adopts NEPM 2021 for O₃, NO₂, SO₂, PM₁₀ and PM_{2.5} (**standards**, not the goals)
- Draft 2026 does introduce incremental PM_{2.5} criteria

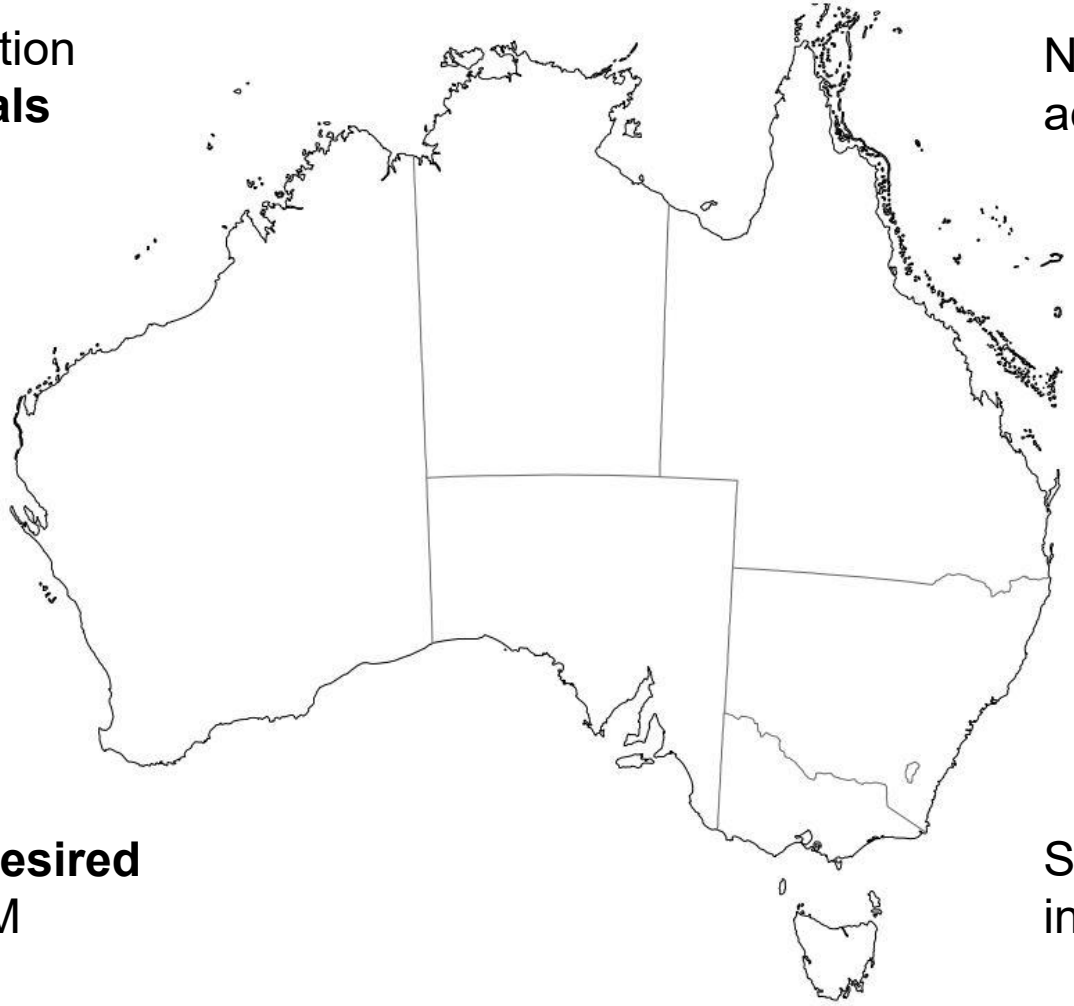
Victoria: Environment Reference Standard (ERS) (2022)

- Adopts NEPM 2021 for NO₂ standards, SO₂ 1 day standard, PM₁₀ 1 day standard, PM_{2.5} **standards**
- Differences:
 - Immediate (2022) enforcement of 0.075 ppm 1 hour standard for SO₂ (2025)
 - 8 hour O₃ criteria of 0.06 ppm, AAQ NEPM 2021 prescribes 0.065 ppm
 - PM₁₀ 1 year criteria of 20 µg/m³ (WHO), NEPM 2021 prescribes 25 µg/m³

So, are we achieving consistency?

PM2.5: Differing adoption
of **standards** and **goals**

Non-NEPM objectives are still
adopted (WHO and incremental)



Misrepresenting the **desired outcome** of the NEPM

State Governments **not consistent**
in adopting the NEPM 2021

Implications for Industry

Achieving reductions

- Significant reductions
- Reductions are objective based, not based on what's achievable for industry
- Air quality criteria are cumulative, assessable at receptors/zones

Policy lag, uncertainty and challenges

- Delay between NEPM release and adoption into State and Local policy (years)
- Uncertain exactly what will be adopted into policy
- Challenges: design, forecasting capital investment, procurement and planning operation changes
- Harder for older facilities (legacy design constraints)

Implications for Industry

Dynamic Referencing

A3	Contaminants must not be released to the atmosphere: a) in excess of the limits stated in <i>Table 2 — Annual Release Limits</i> ; b) in quantities or conditions that may or will increase the ground-level concentration of air quality indicators such that they are in excess of the air quality objectives [REDACTED] prescribed in Schedule 1 of the <u>Environmental Protection (Air) Policy 2019</u> , effective date 1 January 2025, at any sensitive place within the area depicted by the red zones in <i>Appendix 2 -</i>
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Reporting of Total Contaminant Releases to Air

S20	The suitable operator must notify the administering authority upon becoming aware of any exceedance of the <u>EPP Air objectives</u> or an exceedance of the SO ₂ concentration
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Cost, Competitiveness and Sovereign Capacity

- Long supply chains and smaller domestic markets increase cost
- Costs not negligible
- Increasing focus and need for domestic manufacturing

Recommendations

- Avoid stating "**consistent with the AAQ NEPM**"
- Eliminate dynamic referencing in permits
- Provide transition pathways and flexibility for industry when changes are severe
- Clear communication, decision rules and protection for regulators
- Further clarify the meaning of Standards and Goals in NEPM

“If you can’t explain it simply, you don’t understand it well enough.” ...or maybe it can’t be explained simply and could be improved.

Albert Einstein

“Clear is kind. Unclear is unkind.” We need to be clear to industry and acknowledge their role in air quality.

Brené Brown

Thank you