



Submission on the Draft POEO (Clean Air) Regulations 2022

Introduction

Healthy Futures is a nationwide network of healthcare workers, students and community members campaigning for a world where communities can thrive with clean air, clean energy and a healthy environment. We welcome the opportunity to make a submission on the POEO (Clean Air) Regulations.

Exposure to pollutants including fine and coarse particulates, sulphur dioxide, oxides of nitrogen, ozone and air toxins leads to significant health impacts including increased mortality, asthma prevalence and severity of asthma symptoms, chronic bronchitis, ischaemic heart disease and stroke.^{1 2 3} Populations at greatest risk include people with pre-existing health conditions, children, the elderly and pregnant people. Public concern and scientific understanding of the sources and health impacts of air pollution in NSW has significantly increased in recent years, with extensive research by the CSIRO and DPIE that has not been included in the Regulation Impact Statement (RIS).^{4 5 6}

Given that there have been no significant changes to the Clean Air regulations since 2002 and in light of the short timeframe for public consultation, we would urge the EPA to extend the timeframe for consultation in order to ensure that the public interest is given equal weight alongside industry views. We also consider that given other parallel state and national reviews of clean strategies and policies/regulations, the timeframe for review of this regulation should be reduced.

¹ Lockwood, A.H., Welker-Hood, K., Rauch, M. and Gottlieb, B. (2009). Coal's assault on human health: a report from Physicians for Social Responsibility.

<https://www.psr.org/blog/resource/coal-assault-on-human-health/>

² Amster, E. and Lew Levy, C. (2019). Impact of coal-fired power plant emissions on children's health: a systematic review of the epidemiological literature. *Int. J. Environ. Res. Public Health* 2019, 16, 2008. <https://www.mdpi.com/1660-4601/16/11/2008/html>

³ Ewald, B., Knibbs, L., & Marks, G. (2021). Opportunity to reduce paediatric asthma in New South Wales through nitrogen dioxide control. *Australian and New Zealand journal of public health*, 45(4), 400–402. <https://doi.org/10.1111/1753-6405.13111>

⁴ Chang, L., Scorgie, Y., Duc, H., Monk, K., Fuchs, D., & Trieu, T. (2019). Major Source Contributions to Ambient PM_{2.5} and Exposures within the New South Wales Greater Metropolitan Region. *Atmosphere*, 10(3), 138. <https://doi.org/10.3390/atmos10030138>

⁵ Duc, Hiep & Chang, Lisa & Trieu, Toan & Salter, David & Scorgie, Yvonne. (2018). Source Contributions to Ozone Formation in the New South Wales Greater Metropolitan Region, Australia. *Atmosphere*. 9. 443. [10.3390/atmos9110443](https://doi.org/10.3390/atmos9110443).

⁶ Broome, R., Powell, J., Cope, M., Morgan, G. (2020) The mortality effect of PM_{2.5} sources in the Greater Metropolitan Region of Sydney, Australia, *Environment International*, Volume 137, 2020, 105429, ISSN 0160-4120, <https://doi.org/10.1016/j.envint.2019.105429>

Recommendations

1. The POEO (Clean Air) Regulations should be designed to achieve World Health Organization guideline values for air quality⁷ as soon as possible.
2. Reduce the timeframe for the next review of the Regulations
3. Industrial facilities should be required to meet Best Available Techniques / Best Environmental Practice
4. NO_x and PM_{2.5} limits for power stations should meet the limits set out in the European Union Industrial Emissions Directive (EU IED): 200mg/m³ for NO_x and 8mg/m³ for PM_{2.5}
5. Limits should be introduced for SO₂ and mercury emissions from power stations, set at the levels in the EU IED: 205ug/m³ for SO₂ and 4ug/m³ for mercury
6. We support the phasing out of Group 1-4 from 2025
7. The provision to allow exemptions from Group limits **should be removed**
 - a. If the provision for an exemption or legacy condition is maintained, the regulation should explicitly require consideration of a regional air quality assessment including primary and secondary pollutants and a health impact assessment, and pollution reduction programs or pollution controls that could be established or installed to promote continuous improvement.
8. Limits should be adopted on an emissions intensity basis to drive real improvements in health
9. The EPA should ensure that regulatory reform is consistent with the letter and intent of the Minamata Convention
10. Wood heaters should be banned in new premises and removed on sale of premise until a new health-based standard is implemented
11. Emission limits for wood heaters should be strengthened on the basis of assessing emissions based on real-world operating conditions
12. Introduce limits for greenhouse gases, which are an air impurity as defined in the POEO Act
13. Improve data collection to increase the robustness of decision-making using an impact pathway approach

Policy context

⁷ World Health Organization (2020),
<https://www.who.int/news-room/feature-stories/detail/what-are-the-who-air-quality-guidelines>

The World Health Organization released new air quality guidelines in September 2021 in light of the increasing weight of evidence of the harms posed by acute or chronic exposure to air pollution even at low levels.⁷ It is well recognised that there is no safe level of exposure to fine particulate pollution: i.e. all efforts to reduce particulate pollution will result in reductions in morbidity and mortality and improve cardiovascular and respiratory health across the population.⁸ While the National Environment Protection Measures for Ambient Air Quality are yet to be revised since the release of the WHO guidelines, we believe that it is inevitable that NSW will eventually adopt the WHO guideline values. Given the long timeframe before the Clean Air regulations are next to be reviewed, we consider it important that the regulations are designed in a way to allow the WHO guideline values to be achieved, noting that there is nothing preventing the NSW government from adopting stronger standards than the NEPM, or to prevent the EPA from overachieving on those goals.

As demonstrated by Chang et al. (2019)⁴, the major source contributions to population-weighted anthropogenic PM_{2.5} in the Greater Metropolitan region are wood heaters, coal-fired power stations and vehicles. Precursor NO_x emissions from power stations and vehicles also significantly influence ground-level ozone levels in Sydney and the Hunter (Duc et al 2018)⁵, which are rising and as acknowledged in the RIS, will be affected by climate change and population increases in the region.

Industrial emission limits

Coal-burning power stations are the largest individual sources of industrial pollution in the Greater Metropolitan Region (including NO_x, which is a PM_{2.5} and ozone precursor, and SO₂, which is a PM_{2.5} precursor).⁹ Population exposure to PM_{2.5} from coal power stations in the Greater Metropolitan Region is about the same as total exposure from all road vehicles in that region, and is the largest human-caused source contributor to PM_{2.5} concentrations during summertime in every GMR region except the Illawarra.⁴

Across Australia, pollution from coal-burning power stations has been estimated to lead to 785 premature deaths every year, as well as causing 14,434 instances of children experiencing asthma symptoms and 845 babies to be born with low birth weight.¹⁰

The proposed phasing out of Groups 1-4 is consistent with the intent of the regulatory framework that polluting facilities should not be allowed to avoid meeting modern standards merely because they were built in an era when weaker standards were considered acceptable. However, stronger health protection can be achieved by moving towards Best Available Technology / Best Environmental Practice and the adoption of the limits as set out in the European Industrial Emissions Directive.¹¹ The adoption of best practice pollution controls received unanimous multi-partisan support from the recent

⁸ Liu, M.S., Chen, R., Sera, F., Vicedo-Cabrera, A.M, Guo, Y., Tong, S., Coelho, M.S.Z.S., Saldiva, P.H.N., Lavigne, E., et al. (2019) Ambient Particulate Air Pollution and Daily Mortality in 652 Cities. *N Engl J Med* 2019; 381:705-715 DOI: 10.1056/NEJMoa1817364

⁹ EPA NSW (2013), Air Emissions Inventory for the Greater Metropolitan Region

¹⁰ RACGP,

https://www.racgp.org.au/getmedia/3bf25b93-dc91-4040-a737-6f9722c0e5b1/Open-letter-Call-for-clean-energy-by-2030-to-protect-health_1.pdf.aspx

¹¹ European Union (2010), Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control), <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02010L0075-20110106>

Parliamentary Inquiry into the POEO (Clean Air) Amendment Bill.¹² We also believe that limits should be set for sulphur dioxide, which is a NEPM criteria pollutant, and for mercury, which is an air toxin.

The proposed 2025 NOx limit is four times weaker than the best practice EU IED limit, and unlike the EU IED there are no stipulated limits for sulphur dioxide or mercury. Even the proposed 2030 NOx limit remains 2.5 times weaker than the EU IED limit. There is no reason why NSW residents should accept weaker pollution standards than those enjoyed by vulnerable members of the community in the EU.

Article 8 of the Minamata Convention, which was recently ratified by Australia, requires parties to implement best available techniques and best environmental practices to control emissions from existing emissions sources, taking into account national circumstances and economic and technical feasibility.¹³ Given Australia's status as a wealthy country and the global transport of mercury pollution, we believe that Australia would not be able to demonstrate compliance with the Minamata Convention if Australian jurisdictions fail to require adoption of BAT/BEP without any assessment of the economic and technical feasibility of doing so. Mercury pollution controls would also lead to significant health co-benefits by also reducing SO2 and NOx emissions.

We are strongly opposed to the allowance of any exemptions to the air pollution limits set out in the regulations given that repeated experience has shown that in practice this defeats the purpose of the limits and puts the EPA in a difficult position as a regulator.

Delta Electricity's recent third application for an exemption to the Group 5 NOx limits is a case in point. The proposed phasing out of Group 4 in 2025 allows plenty of time to fit low-NOx burners, as Origin Energy has already done, or to consider other options. Had no exemption been allowed, Delta Electricity would have begun the process of retrofitting low-NOx burners many years ago. Given the substantial cost reductions in wind, solar and storage technologies, they may also have considered that it would be more economic to build replacement capacity ahead of the phasing out of Group 4 emission limits, or given notice of closure well in advance to allow the market to fill the gap. Both of these options would be consistent with the intent of the regulations, which leave it to industry to decide how they intend to meet the limits.

However in practice, the mere existence of the possibility of an exemption meant that Delta did nothing in any of the five-year exemption periods, but simply waited until the last possible minute to apply for a further exemption. Pollution controls take time to fit, and had the EPA not granted an exemption Delta would have immediately been in non-compliance and forced to close without replacement capacity available. This put the EPA in a difficult position, and we consider that Delta did not act in good faith in relation to the intended function of the regulations.

Delta's public comments make it clear that they simply do not accept the well-established evidence of harm to human health caused by coal-burning power stations, which as demonstrated by the RIS significantly exceeds the costs of abatement. Delta has repeatedly stressed that air quality in the region meets NEPM criteria, that pollution concentrations are higher in other areas, and that other sources of pollution also impact on air quality. None of this negates the fact that Delta's uncontrolled NOx emissions are increasing morbidity and mortality both locally and regionally and putting

¹² NSW Parliament, Portfolio Committee No 7 (2021), Report No. 12 - PC7 - Protection of the Environment Operations Amendment (Clean Air) Bill 2021, [https://www.parliament.nsw.gov.au/lcdocs/inquiries/2812/Report%20No.%2012%20-%20PC7%20-%200Protection%20of%20the%20Environment%20Operations%20Amendment%20\(Clean%20Air\)%20Bill%202021.pdf](https://www.parliament.nsw.gov.au/lcdocs/inquiries/2812/Report%20No.%2012%20-%20PC7%20-%200Protection%20of%20the%20Environment%20Operations%20Amendment%20(Clean%20Air)%20Bill%202021.pdf)

¹³ United Nations Environment Program (2019), Minamata Convention text and annexes, <https://www.mercuryconvention.org/en/resources/minamata-convention-mercury-text-and-annexes>

additional pressure on already stretched health services. For Delta, this is simply regarded as somebody else's problem. We are also concerned that Delta Electricity has never engaged a qualified epidemiologist to assess concerns about health impacts from Vales Point Power Station, but has instead hired unqualified consultants to publish and disseminate error-laden poor-quality critiques of independent health studies. Removing the provision for exemptions to the Clean Air Regulation would prevent bad faith attempts by regulated industry to avoid compliance with regulations to which they object.

The current exemption process also includes no requirement to conduct a regional air quality assessment across the Greater Metropolitan Region (which should include an assessment of primary and secondary pollution) or a health impact assessment, rendering the process arbitrary.

The regulation of air pollutants based on concentrations per volume of flue gas is not effective in reducing health impacts, as plant operators tend to simply introduce more airflow. That does not affect the volume of pollution released, which affects population exposure and resultant health impacts. The revised regulation should adopt output-based pollution intensity limits to drive real-world health benefits.

Wood heaters

Wood heaters are the largest contributor to PM_{2.5} concentrations during winter but the regulatory review has made no effort to consider how to further protect vulnerable communities from the harmful effects of woodsmoke, instead only modelling the status quo, or the repeal of existing regulations. The current policy approach of educating communities on how to properly use wood heaters has demonstrably failed to lead to any substantial abatement of woodsmoke pollution.¹⁴

We support a wood heater buyback scheme to facilitate the phase out of wood heaters but acknowledge that such a proposal falls outside of the scope of this regulatory review. We also support a ban on the installation of wood heaters in new dwellings until a new health-based standard is implemented as well as the requirement to remove wood heaters on sale of premises, which could be included in the Clean Air regulation but which has not been assessed.

Laboratory testing of emissions from wood heaters compliant with the (out of date) AS4013 and AS4012 standards does not reflect real-world operation of wood heaters. We consider that the EPA should look to Environment Canterbury's use of the Canterbury Method One test to assess emissions under real-world operating conditions.¹⁵ That method led to the adoption of a 0.5g/kg emission limit for wood heaters, which is significantly stronger than the 1.5g/kg limit contained in the proposed POEO (Clean Air) Regulation.

Climate change

It is well acknowledged that climate change will cause deterioration in air quality in NSW.¹⁶ This is due to increased temperatures promoting the formation of harmful secondary ozone and PM_{2.5} pollution,

¹⁴ Commonwealth Department of Agriculture, Water and the Environment, (2016), State of the Environment Report, Ambient Air Quality
<https://soe.environment.gov.au/theme/ambient-air-quality/framework/pressures>

¹⁵ Environment Canterbury (2012), Canterbury Method 1 for testing of ultra-low emission wood heaters, <https://www.ecan.govt.nz/document/download?uri=3109737>

¹⁶ Paton-Walsh, C., Rayner, P., Simmons, J., Fiddes, S. L., Schofield, R., Bridgman, H., Beupark, S., Broome, R., Chambers, S. D., Chang, L. T.-C., Cope, M., Cowie, C. T., Desservettaz, M., Dominick, D., Emmerson, K., Forehead, H., Galbally, I. E., Griffiths, A., Guérette, É.-A., ... Zhang, Y. (2019). A Clean Air Plan for Sydney: An Overview of the Special Issue on Air Quality in New South Wales. *Atmosphere*, 10(12), 774. <https://doi.org/10.3390/atmos10120774>

and the increase in frequency and severity of extreme weather events such as bushfires and droughts.

The recent judgement in *Bushfire Survivors for Climate Action v EPA* required the EPA to develop policies and procedures to address climate change as the lead environmental regulator in NSW.¹⁷ Given that greenhouse gas emissions cause significant and often catastrophic adverse impacts on the environment and human health within NSW and elsewhere, we believe it is well past time for greenhouse emissions to be treated in the same way as every other pollutant. We recommend that the EPA introduce limits for greenhouse gases, which are an air impurity as defined in the POEO Act, to be reduced in line with the NSW Climate Change Policy framework.

Please do not hesitate to contact us if we can further assist in relation to the issues raised in this submission.

¹⁷ *Bushfire Survivors for Climate Action Inc v Environment Protection Authority* [2020] NSWLEC 152, <https://www.caselaw.nsw.gov.au/decision/175909c758d2e928125e3c16>