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SUBMISSION TO NSW EPA ON NSW CLEAN AIR REGULATION 2022

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Breathing polluted air has substantial detrimental effects on health, and as breathing is not optional, pollution of air must be regulated by government. Control of exposure cannot be left to individuals. The NSW EPA has to date been very weak in its implementation of regulations to protect public health as shown by the sorry story of the regulation of emissions to air from Vales Point power station.

Failure to enforce the intent of existing regulations.

The POEO Clean Air Regulations of 2010, part 35 is specifically about phasing out older group 2 licenses in 2012, with the intention of requiring old plant to upgrade to modern standards. The regulations have a provision allowing granting of an exemption to this requirement for up to 5 years, presumably to allow time for implementation of new controls. If it was envisaged that polluters could apply for sequential 5 year exemptions adinfinitum part 35 would never have been written, as the exemptions completely subvert its intent. In late 2021 Vales Point power station operating under POEO license 761 was granted its 3rd consecutive 5 year exemption to meeting group 5 standards. This was granted despite strong opposition from the local community, and substantial science based argument about the health impacts of current levels of pollutant release. The regulator has not commissioned any independent evaluation of the power station health impacts and has relied on opinions of hired company consultants. While limits on peak values of NOx concentration were lowered somewhat, this will make very little difference to average community exposure, which is the metric that matters.

Failure to regulate the metric that matters to public health.

Air pollutants have both acute short term effects, and chronic effects from long term exposure. For fine particle pollution in the pm2.5 class the chronic effects are approximately 5 times greater than the acute effects.

Nitrogen dioxide is a respiratory irritant for which the health effects were reviewed by the US EPA Integrated Science Assessment 2016. That review found that there was strong and consistent evidence of health effects and concluded that short term exposure had a causal association with respiratory effects, and that long term exposure was likely to be causally associated with respiratory effects. The NSW EPA has not conducted its own assessment of the science, so I assume it relies on the US assessment.

Power station regulations set a peak 1 hour concentration limit, a value not to be exceeded. This matches out dated thinking on air pollution, that there is a “safe level” below which there is no harm to health. More recent understanding is that there is no safe lower threshold of exposure, and policy should drive exposure as low as can feasibly be achieved.

What matters to human health is the annual average exposure. Health impact assessments such as the one colleagues and I recently published in the peer reviewed journal Aust NZ J Public Health are based on the annual exposure. (Opportunity to reduce pediatric asthma in NSW through nitrogen dioxide control. Aust NZ J Public Health. 2021; 45:400-2; doi: 10.1111/1753-6405.13111)

Limiting the concentration on the worst hour of the year does not necessarily alter the average pollution release. The metric that best matches human health burden is the pollution intensity. How much of each pollutant is released for each unit of production from the plant. Table 1 below shows the pollution intensity for Vales Point and several other coal fired power stations. It can be seen that Vales Point is twice as polluting as Eraring located just across lake Macquarie, and nearly 6 times as polluting as allowed under the 2012 regulation in the USA. It is entirely unjustified to allow this plant to continue operating without the NOx controls in place at Eraring and the other more modern power stations. The reductions in allowable peak values set in the 2021 license review probably made very little difference to the average values, so little extra protection for health.

Table 1: Pollution intensity, National Pollutant Inventory. Kg NOx released per Megawatt hour of production in 2016-17 for Vales Point compared to Australian power stations commissioned or upgraded this century, and for comparison the 2012 rule for the USA

	Year Commissioned	2016-17 pollution intensity NOx Kg/MWh
Vales Point	1978	2.58
Kogan Ck	2007	1.20
Millmeran	2003	1.04
Callide C	2001	1.07
Eraring	1982 upgraded 2012	1.24
US rule 2012		0.45

Recommendations

- The pollution limits for power stations and similar large emitters be set as a limit of pollution release per unit of production, rather than peak concentration values.
- The limit values for pollution intensity should be set to match that achieved by modern best practice.
- There should be no capacity to grant exemptions as this has led to demonstrable failures in the past.
- I support that group 3and4 licenses should now move to group 5, but this is meaningless if they can be granted exemptions.

Errors of fact:

RIS page 5 para 3 states that concentrations of SO2 consistently meet national air quality standards. This is not true for Muswellbrook which exceeds the 1 hour SO2 standard (100 ppb) every year.