

Strategy and Reform
Department of Environment Regulation
Locked Bag 33 Cloisters Square
PERTH WA 6850

Draft for consultation

‘Environmental Risk Assessment Framework Division 3, Part V, Environmental Protection Act 1986’

This submission is made on behalf of the Western Australian branch of the Clean Air Society of Australia and New Zealand (CASANZ). CASANZ is a non-profit, professional association that has been active for over 40 years, currently with a membership base of over 600 members. CASANZ focuses on the protection and improvement of the quality of the air we breathe, our climate and our atmosphere throughout all regions of Australia and New Zealand.

CASANZ is a technical society and a non-government organisation. We have members representing a broad range of sectors including national, state and local governments, science, business, industry, education, management and policy, legal and the general community. Our primary objective is to ensure that our members and other stakeholders are well informed about air quality issues and their problems. We promote professional excellence, continuous awareness of national and world issues and the facilitation of air quality related courses, workshops and seminars, facilitated by local and world recognised presenters.

In regard to the draft ‘Environmental Risk Assessment Framework’ the WA branch of CASANZ has some comments concerning the following:

1. Within Table 4a (Air Quality Criteria (Substances)) there are a list of substances, their associated averaging period and what is classified as the ‘Maximum (ambient) concentration’ that were sourced from the NSW DEC document ‘Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales’. When this document (NSW DEC 2005) is examined it is apparent that the NSW DEC classifies the concentrations as ‘Impact assessment criteria’ not maximum concentrations. Within the NSW document there are guidelines on how to apply the impact assessment criteria including:
 - a. Location
 - b. Reporting percentile on whether it is a level 1 or level 2 impact assessment
 - c. Variations on if it is an odourous substance and changes to the impact assessment criteria as a function of population density.

All of this contextual and supporting information, and guidance, is lacking from the draft ‘Environmental Risk Assessment Framework’ released by the DER. We request that this information be provided in an update and be made available for consultation prior to finalisation.

2. Conversations with personnel from the NSW Office of Heritage and Environment indicate that the document ‘Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales’ will be undergoing a review in 2016. Given the results of this review process cannot be known it would not be advisable to finalise any documentation referencing NSW DEC 2005 until their review process is complete and the results published.
3. The criteria for principal and individual toxic air pollutants listed in NSW DEC 2005 clearly reference the Victorian Gazette 2001. Within this document the Environment Protection Authority Victoria (EPAV) define the criteria for substances as a ‘design criteria’. The design criteria “were derived by dividing the Occupational Health and Safety Time Weighted Average (TWA) by a safety factor of 30” (EPAV 2002). According to EPAV this provided a method that resulted in a “conservative tool for the assessment of emissions from individual sites” (EPAV 2002). The EPAV also state that the design criteria are modelling tools and it is inappropriate to use these values as air quality objectives for monitoring.

On this basis, the draft 'Environmental Risk Assessment Framework' released by the DER would appear to be applying the EPAV and NSW DEC guidance out of context.

4. The design criteria, as specified in the Victorian Gazette 2001, are averaged over 3-minutes. It is noted in EPAV 2002 that an hourly average was considered, however through consultation with industry the 3-minute average was retained – why NSW moved to an hourly average is not known but it is clearly outside the intent of the EPAV. The draft 'Environmental Risk Assessment Framework' released by the DER does not contain adequate context to justify the adoption of this value, nor the context within which it is to be interpreted or applied.
5. The classification of substances, derived from the Victorian Gazette 2001, within the draft Environmental Risk Assessment as maximum (ambient) concentrations is incorrect and well beyond the original intent of the EPAV. Furthermore by classifying it as an 'ambient' concentration may result in this being applied as an ambient monitoring target which is also completely beyond the original intent.
6. A significant issue and flaw of the current draft is that the definition of consequences in terms of predicted ground level concentrations (glc) does not match the descriptors for those categories. For example for major consequences, this is numerically defined if the glcs exceed the health criteria. The corresponding descriptor is defined as "Exposure to hazard with permanent prolonged adverse health effects expected to small population and Significant impact to amenity for extended periods expected to large population. In addition, this is not consistent with the way the design criteria were originally derived which are used as the values for many of the species. I.e. the NSW dglcs are meant to be design guidelines, derived very simplistically from occupational criteria by using large safety margins. We request that this be reviewed and amended by the DER, and that opportunity be provided for consultation prior to finalisation.
7. The proposed annual inorganic mercury concentration of $0.2 \mu\text{g}/\text{m}^3$ is possibly originally sourced from WHO (2003). It is defined in that document as the "tolerable concentration for long term inhalation exposure to elemental mercury vapour" (see Section 10.2) WHO (2003). Again, as raised in Point 6, there is a mismatch between the descriptor proposed by the DER and the corresponding likely major consequence. The proposed 1-hour criteria for $0.6 \mu\text{g}/\text{m}^3$ mercury (inorganic) (from Toxikos) appears to be incorrect as it is only 3 times the annual average of $0.2 \mu\text{g}/\text{m}^3$.
8. No guidance has been provided on what statistic is to be used to compare against the draft values. In many cases in the NSW guidelines, the 9th highest hour and not the maximum 1-hour is to be compared to the guideline. We request that this be reviewed and amended by the DER, and that opportunity be provided for consultation prior to finalisation.
9. No guidance is given as to the location to which the draft values are to apply or to be determined – ie nearest sensitive residence or anywhere outside the plant boundary? We request that this be reviewed and amended by the DER, and that opportunity be provided for consultation prior to finalisation.
10. Presumably the draft values are not to apply within any area currently defined by for management purposes in an Environmental Protection Policy (EPP) such as the Kwinana and Kalgoorlie EPP areas?
11. The document needs to state if background concentrations are to be included or are these the values to be compared to the industry contribution alone? If background concentrations are to be included, then there needs to be an indication of which statistic is to be used. For example the 90th percentile value is commonly used. We request that this be reviewed and amended by the DER, and that opportunity be provided for consultation prior to finalisation.
12. All references cited, such as to Toxikos 2010, 2011 and 2012, need to be made publicly available so that the proposed criteria are transparent and traceable. We request that all supporting documents are made available as part of the next consultation prior to finalisation.



Reference

Department of Environment and Conservation (NSW). 2005. *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*.

EPA Victoria. 2002. *Policy Impact Assessment: Variations to State Environment Protection Policy (Air Quality Management) and State Environment Protection Policy (Ambient Air Quality)*.

Victorian Government Gazette. 2001. *Environment Protection Act 1970: State Environment Protection Policy (Air Quality Management)*. No. S 240 Friday 21 December 2001

World Health Organisation (WHO). 2003. *Concise International Chemical Assessment Document (CICAD): 50 Elemental Mercury and Inorganic Mercury Compounds: Human Health Impacts*.