



South Australian Chamber of Mines and Energy

A review of air quality impacts and regulation – South Australian mining and extractives industry

Submission to

Department of the Premier and Cabinet

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South Australian Chamber of Mines and Energy

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Representing, promoting and protecting the resources industry of South Australia

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SACOME

The South Australian Chamber of Mines and Energy (SACOME) is the peak industry association for all companies with business interests in the resources industry in South Australia, including those with business, vocational or professional interests in minerals exploration, mining and processing, oil and gas exploration, extraction and processing, power generation, transmission and distribution, logistics, transport, infrastructure, and those with clients in these sectors.

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Executive Summary

The South Australian Chamber of Mines and Energy (SACOME) welcomes the opportunity to provide feedback and comment to the Department of the Premier and Cabinet – Mineral Resources Division (DPC-MRD) on the Air Quality Guideline Project – Stage 1 Review.

The National Environmental Protection (Air Quality) Measure (“AAQ NEPM”) is designed to measure exposure to air pollution in significant urban centres, and its intent is to provide overarching policy formulation on a national level. The standards for PM₁₀ and PM_{2.5} are based on scientific studies on exposure in airsheds; the intent of the AAQ NEPM measure. The NEPM Standard is not designed nor expected to be implemented to monitor and manage point source emissions or hotspots.

The sector’s primary concern with the proposed content points for an air quality guideline is the inclusion of definitive compliance standards for particulate matter. This would introduce a ‘one size fits all’ approach to compliance which is not risk based, and perpetuate the potential for the NEPM’s misapplication as a point source or industry standard which is not its intent. Further, it is the sector’s view this would be at variance to the EPA guidelines; that the values are not mandatory but are to be considered in a risk based approach to the authorisation of activities.

The Review also does not provide sufficient or relevant evidence to support the application of the NEPM values to South Australian resources activity, considering nature of dusts or typical dust loads.

The report is a comprehensive review of current cross jurisdictional practice and regulation of PM nationally and in some cases internationally. It then sets out the proposed content points for an air quality guideline for the mineral and extractive industries.

However before framing the guideline content, DPC-MRD should be articulating the overarching policy to industry, including:

- The governments objectives and primary considerations for regulating air quality in mining and extractive projects,
- What government views as best practice regulation of air quality in the mining and extractives industry, and
- What is trying to be achieved through the guidelines.

In addition the sector would like to know what will be done to assist industry in:

- Better communicating to stakeholders that nuisance does not equal health risks, and
- Using airshed management for airsheds and not incorrectly applying limits to point sources.

Recommendation

It is the sectors position that the guidelines should not include definitive compliance standards as seemingly being considered in the proposed content points (Content Point 6c & Table 26).

However, if compliance standards are to be applied to the regulation and assessment of air quality in mining projects, there should be specific starting standards based on the different types or sources of dust (e.g. urban/exhaust particulates v crustal dust).

National Environmental Protection Measure

To consider the proposed particulate health standard for human health (Table 26) in the DPC-MRD Air Quality Guideline project, which is the maximum Ground Level Concentration from the EPA's Air Quality Policy, in turn adopted from the National Environmental Protection (Air Quality) Measure ("AAQ NEPM"), it is relevant to return to the basis for values used in the AAQ NEPM. During consultation on the draft Environment Protection (Air Quality) Policy ("AAQ EPP") in 2016, SACOME emphasised that the inclusion of standards directly from the National Environmental Protection (Air Quality) Measure ("AAQ NEPM"), without context or the basis for the values, in to a policy to regulate individual industrial activity in SA was outside the scope of the NEPM.

The AAQ NEPM is designed to measure exposure to air pollution in significant urban centres, and its intent is to provide overall policy formulation on a national level. The standards for PM₁₀ and PM_{2.5} are based on scientific studies on exposure in airsheds; the intent of the AAQ NEPM measure. The Standard is not designed nor expected to be implemented to monitor and manage point source emissions or hotspots. Those living in urban areas have a varying level of exposure in much the same way as those in rural, regional and industrial areas. Exposure of people who live near major sources of pollution – such as busy roads – is not assessed through air quality monitoring. These people are likely to be exposed to higher levels of air pollution than those measured at performance monitoring stations.

The impact statement accompanying the proposed variation to the AAQ NEPM acknowledged the potential for the standards to be misapplied: "the AAQ NEPM standards are often used in a variety of locations and contexts, some of which are inconsistent with the intention of the AAQ NEPM. The AAQ NEPM standards are designed to be applied at locations that are **representative** (SACOME emphasis) of overall air quality in those areas"¹.

Regulation of air quality for mining

The AAQ EPP states that the EPA must take into account ground level concentrations (GLC) values (clause 18(1)(a)) when determining authorisations. From the meetings held between industry and the EPA/Minerals Resources Division during the consultation phase for the AAQ EPP in 2016, the EPA's advice to industry was that the GLC of pollutants in the policy are intended to allow for flexibility in their application for risk based assessment of off-site impacts. That is the values are not mandatory but are to be considered in a risk based approach to the authorisation of activities.

The industry needs to be assured that there is no ambiguity in the interpretation and application of the policy in the air quality guidelines, specifically in relation to PM₁₀ and PM_{2.5}. However the proposed content point around air quality assessment standards is in effect directing limits on activities which is at variance with the intent of the AAQ EPP and with point 2a)i) of the proposed content points for an air quality guideline for mining. As the impact statement to the variation of the AAQ NEPM states the "standards were established in relation to broad air quality within airsheds and are applicable at urban centres away from hot spots"².

¹ Draft variation to the National Environment Protection (Ambient Air Quality) Measure – Impact Statement. Prepared for National Environment Protection Council, July 2014. Pages xi and 21.

² Ibid. Page 19

The guideline is not a regulatory instrument but the inclusion of the standards shown in Table 26 (page 104) will be interpreted by stakeholders as an absolute limit and that a condition on projects will be prohibiting emission of any particulate matter on occasions where offsite air quality measurements are at or exceeding the NEPM values. Any lessening of that perceived standard will be regarded as a lessening of standards for their individual circumstances. Based on the intent of the NEPM itself, and the lack of evidence supporting such level away from urban centres, this is particularly regrettable.

It is essential that the new guidelines for management of air quality being developed in collaboration between DPC-MRD and EPA be absolutely clear in the intent in managing air quality in mining development; that values for ground level concentrations, particularly particulate matter, are not mandatory but are to be considered in a risk based approach to the authorisation of activities. The industry would also have concern if the NEPM values were applied as a starting point from which the mining proponent needs to shift either the regulator or the stakeholder. This would be perceived again as a lessening of standards.

Conditions set as part of an authorisation should be determined with regard to the nature of mine, the extraction amount, the context of the region of the activity and baseline data of air quality; in other words the contribution from natural and other activities in area of development (eg cropping). It would be unreasonable for other activities (eg cropping) not regulated in the same manner for air quality to impact on the compliance/conditions set for operationally contributed PM of authorised mining activity in a given area.

Existing land use rights need to be protected along with a risk based approach to reduce loads to the air shed as required. This approach should recognise the contribution of various sources and regulatory action should be applied fairly and proportionally to avoid unreasonable compliance burden.

Comment on the report

The report is a comprehensive review of current cross jurisdictional practice and regulation of PM nationally and in some cases internationally. This makes the report a useful source of reference of the varying approaches to regulation and how they operate in practice to inform continuous improvement of regulatory practice.

The report also provides information from research that has informed broader policy on air quality internationally and nationally that has been incorporated in to the AAQ NEPM. Much of this is documentation of research on the impacts PM from the northern hemisphere which at times can be difficult to extrapolate to Australian conditions.

SACOME members would like to see further Australian based research on relevant PM referenced, or where this doesn't substantially exist acknowledge the aspects that are not relevant, such that a risk based approach does not rely on data relating to potentially more harmful forms of PM dust such as coal, or acute periods of very high dust events.

In particular the report does not cover the full range of air pollutants, including those that can be associated with downstream processing operations which is important to distinguish it as a benchmarking review of PM for mining only. As such the report should be more specifically titled PM air quality impacts. The differences between inert crustal dusts versus metropolitan dust and exhaust

particulates, and coal dust are not drawn and single standards appear to be recommended irrespective of the properties of the dust in question.

Proposed content points under consideration for inclusion in a collaborative air quality guideline

Preliminary assessment screening tool

SACOME would expect there to be extensive engagement with industry in the development of the preliminary assessment screening tool. The Technical Advisory Committee being established will have a substantive role, however further and broader consultation with the sector is imperative prior to its finalisation.

The screening tool will need to take into account contextual information, including the type of mine (material) and extraction amount, the region in which the operation is taking place, as well as receptor distribution and pattern, and base line data on air quality.

As part of SACOME's submission to the review of the mining act, specific recommendations were made to include in the mining assessment process, a "project scope and preliminary impact assessment to guide the preparation of a Terms of Reference for the environmental, economic and social impact assessment for a new, modified or extended mining project". This would ensure that the proponent has full knowledge of what is required to gain approval for the project at commencement. It should be possible to inform the proponent via the Terms of Reference how the Mining Lease conditions are likely to be framed, in terms of the level of assessment required for the various impact assessments and what regulatory standards will be applicable. The introduction of a preliminary assessment screening tool will need to be considered in the context of the government's response to the mining act review.

Recommended air quality impact assessment indicators in a dispersion model

Human health - The air quality guideline for mining should be consistent with the AAQ EPP to the extent that flexibility is embedded, however the numbers adopted in the AAQ EPP should not be automatically regarded as a starting point. The sector re-emphasises that the NEPM standards (which are contained in the AAQ EPP as the particulate GLC) are not designed nor expected to be implemented to monitor and manage point source emissions or hotspots. Additionally, the EPA has previously advised to industry that GLC of pollutants in the policy are intended to allow for flexibility in their application for risk based assessment of off-site impacts.

Amenity – The Report highlights the minimal research into the relationship between TSP concentration and amenity (p 53) and recognises that amenity loss is a highly subjective matter. Yet the proposal is to implement TSP as the primary indicator for amenity impacts and apply a standard that will be interpreted by stakeholders as an absolute limit.

Environmental – The Deposited Dust standard has been derived from impact assessments on field crops. The review provides no scientific basis for the application the deposited dust standard to native vegetation. The sector makes the point that regulation needs to be risk based, and project conditions in relation to air quality should be based on the type of mine, extraction volume, and location of the mine. Again, the need to avoid default absolute limits is important as this will place great pressure on mining proponents to prove that impact does not exist, despite a lack of evidence that it does.

Air quality monitoring

The report encourages the presentation of real-time monitoring data on a website, which assumes it would be accessible and promoted to the general public. However, in areas where heavy industrial activity is undertaken by multiple users the data won't readily demonstrate who is contributing to background levels and inaccurate conclusions being drawn. If the screening tool allow certain industries below certain threshold levels to be exempt from certain monitoring (real-time), and cumulative industry occurs in the airshed, it is likely the largest industry, even though it may be able to demonstrate best practice and is required to show real-time monitoring, will be held accountable for exceedances. More guidance and work is required to develop an air monitoring network that accounts for all industry in an airshed.

The 'encouragement' to present real-time monitoring data on a website should only be regarded as a guideline and should not become or be viewed as regulatory.

Air pollution dispersion modelling

This should only be regarded as a guideline and should not become or be viewed as regulatory. The intent of modelling is to predict worse case impacts and is therefore conservative in its approach and is used as a guidance tool for risk based approach to management of activities and is not suitable as a compliance monitoring instrument.

Air quality impact assessment standards

The sector is concerned that the guideline is introducing standards that are goals for air sheds as limits from point sources. As already commented, this is in effect directing limits on activities which is at variance with the intent of the AAQ EPP and AAQ NEPM. As the impact statement to the AAQ NEPM As the impact statement to the variation of the AAQ NEPM states the "standards were established in relation to broad air quality within airsheds and are applicable at urban centres away from hot spots"³. These standards will be interpreted by stakeholders as an absolute limit and a condition on projects will be prohibiting emission of any particulate matter on occasions where offsite air quality measurements are at or exceeding the NEPM values.

Air quality operational compliance

- a) The monitoring methods recommended in the guideline should not become or be viewed as regulatory
- b) The guideline could include discussion on these matters, but how it is presented needs to be carefully worked through and agreed through engagement with industry. It should only be regarded as a guideline and should not become or be viewed as regulatory.
- c) Refer to SACOME's response for content point 5.

³ Ibid. Page 19

Multi-operator mining zones

In principle, the sector supports this approach. The NEPM is designed to protect health of the public within the airshed. It is however a complicated assessment, a whole airshed approach is needed with all sources contributing to the air shed being modelled rather than assessment of each individual source contribution plus a background concentration. There is a possibility for cumulative effects from sources that results in parts of the airshed that become 'hot spots' under particular meteorological conditions with resulting implications for people, and flora and fauna. Each air shed would need to be assessed on a case by case basis, supported with modelling and ambient air quality monitoring data.

Reporting protocols

a) The sector supports openness and transparency in reporting of its activities, but does have concern for the potential for unintended consequences, as has been observable by the use of reportable incidences in the petroleum sector for site contamination from interest groups seeking to disrupt the sector.

b) Not supported unless replaced by both an 'exceptional events rule' and also a 'natural events' rule similar to the US EPA for winds over an agreed wind speed. The sector requires clear guidance when there are events that exceed the NEPM. Fire, dust storms, and strong and hot winds (natural events rule) as can occur in South Australia, harvesting and other external emissions should not disadvantage the miner.

c) In principle, the sector supports this approach. An approach on how exceedance events are defined, measured and quantified needs to be determined. The assessment and quantification of each exceedance event should be undertaken by the regulator to ensure consistency and validity of the exceedance event data. This data can then be used to validate claims from miners that exceedances are due to natural or non- anthropogenic sources, or special causes.

Control strategies

This should only be regarded as a guideline and should not become or be viewed as regulatory.

Environmental air quality outcome for human health

The sector is willing to progress further discussions. The intention of such an outcome, how it is applied and the interpretation by stakeholders needs to be carefully considered.

Other comments/questions

1. If an airshed is demonstrating a PM_{10} according to the AAQ EPP would any industry application for that airshed be refused? This could have an impact on growth and industry. Industry should be assessed on operationally contributed PM_{10} and this should be determined on toxicity of PM_{10} and based on sound research.
2. More guidance is still required in determining the buffer distance guidance for certain industry which are assessed on a 'case-by-case' basis. Do the regulators require modelling; real time data or research to demonstrate actual impact at certain distances, or will this be incorporated into the proposed screening tool?
3. Without seeing an example of the proposed screening tool it is difficult to understand the level of requirement of how the rest of the content points will be applied. It is assumed and recommended based on the outcome of the screening tool certain air quality assessment indicators will not be required.