Nature Conservation Council
The voice for nature in NSW

LBL Review
Regulatory Reform and Advice Branch
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NCC Submission on Review of the Load-based Licensing Scheme – Issues Paper

Dear Sir/Madam,

The Nature Conservation Council of NSW (**NCC**) is the peak environment organisation for New South Wales, representing over 150 member societies across the state. Together we are committed to protecting and conserving the wildlife, landscapes and natural resources of NSW.

We welcome the opportunity to comment on the *Review of the Load-based licensing Scheme Issues Paper.* We understand that this is the first comprehensive review of the Load-based licencing scheme (LBL Scheme) since it was introduced in 1999.

The Issues Paper provides a useful analysis of the LBL Scheme, highlights areas in which it could be improved and options for amending and updating the scheme.

While we recognise there is significant scope to expand the LBL scheme across a broad range of industries, our submission focuses specifically on mining for coal, coal-fired power stations and other associated industries, which have significant impacts on the environment and communities but which are not adequately covered by the LBL Scheme. We discuss key issues relating to air quality, water quality, the use of critical zones and inadequate licence fees. We believe there is a strong case for expanding the LBL Scheme to include mining for coal and other related industries.

We also suggest that fees under the LBL Scheme be increased, so that the Scheme acts as a real deterrent for polluters and incentivises improvements to technology and more productive and sustainable systems.

Yours sincerely,

Kate Smolski
Chief Executive Officer

NCC SUBMISSION ON REVIEW OF THE LOAD-BASED LICENSING SCHEME – ISSUES PAPER

INTRODUCTION

NCC welcomes the review of the NSW Load-based Licensing Scheme (**LBL Scheme**). We are generally supportive of the scheme as a mechanism for reducing pollution and improving the environmental performance of polluting industries in NSW. We believe there is potential to expand the scope of the LBL Scheme to include coal mining and other related activities and to increase the fees to be more reflective of the costs of pollution on society and drive cleaner production.

The Executive Summary of the *Review of the Load-based licensing Scheme Issues Paper* (**Issues Paper**)[1] states that:

"The LBL scheme aims to encourage cleaner production through the application of the 'polluter pays' principle that requires some environment protection licensees to pay part of their licence fees based on the load of certain air and water pollutants their activities release to the environment"

NCC strongly supports the "polluter pays" principle which is an important component of the principles of ecologically sustainable development, as defined in section 6(2) of the *Protection of the Environment Administration Act* 1991. It provides that "…those who generate pollution and waste should bear the cost of containment, avoidance or abatement".

We note that the LBL Scheme requires only <u>some</u> environment protection licensees to pay part of their licence fees based on the load of certain air and water pollutants their activities release to the environment. We also note that the fees are far lower than the costs externalised by polluters onto the community and too low to incentivise polluters to implement best-practice pollution controls.

A robust application of the polluter pays principle would ensure that all polluting licensees would be captured by the LBL Scheme. We are particularly concerned that mining for coal and minerals in NSW is not currently captured by the LBL scheme, and we see this is as a significant gap in the regulation of polluting of industries in NSW. Coal mining is responsible for a significant proportion of damaging pollutants in NSW including air pollution from particulate matter (PM_{10} and $PM_{2.5}$), volatile organic compounds (VOCs) and sulphur and nitrogen oxides (SO_X and NO_X), and water pollution from trace metals such as arsenic, chromium, selenium, mercury and lead.

This pollution is having significant impacts on the environment and communities of NSW particularly in areas where coal mining and power generation is concentrated such as the Hunter Valley, Central Coast and Illawarra, yet it is not captured by the LBL Scheme. This is in direct contrast to the polluter pays principle, and the purpose of the LBL Scheme. All pollutants for which coal mining and other related activities are major contributors should be listed as assessable pollutants under the LBL Scheme.

While we recognise there is significant scope to expand the LBL scheme across a broad range of industries, our submission focuses specifically on coal fired power-stations, mining for coal and other associated industries.

[1] NSW EPA: Review of the Load Based Licensing Scheme Issues Paper, Executive Summary, p viii

AIR QUALITY

The Issues Paper indicates that trends in total loads emitted to the NSW environment from the majority of LBL assessable air pollutants were stable or trending downwards in the eleven years from 2003-04 to 2013-14 (page 11). However, the Issues Paper indicates that this is not the whole picture with an increase in air pollutants, particularly PM_{10} emissions, from coal mining, which is not reflected in the data trend because coal mining is not captured by the LBL scheme (Issues Paper, 3.4.5).

Additionally, emissions from coal-fired power stations such as SO_X, NO_X and mercury were stable or increasing. Comparing this performance to other developed countries, in the 33 member countries of the European Environment Agency, SO_X emissions and NOx have reduced by 74% and 44% respectively over the last two decades[2]. Our pollution controls can clearly do much better.

The failure of the LBL Scheme to cover air pollutants from coal mining is a significant gap in the regulatory system. It is also clear that the LBL scheme is not effective in encouraging NSW coal fired power stations to implement best-practice pollution controls.

The Government's recently released *Consultation Paper – Clean Air for NSW*[3], highlights that the health impacts of air pollution are significant and contribute to:

- 520 premature deaths and 6300 cumulative years of life lost in Sydney
- 1180 hospital admissions in Sydney
- an estimated $6.4 billion (2015 AUD) in health costs in the NSW Greater Metropolitan Region

Expanding the LBL Scheme to include pollutants from coal mining, and increasing the fees to levels which will drive best-practice cleaner production are important steps towards addressing the air pollution issues facing the NSW environment and communities.

PM_{10} and $PM_{2.5}$

The table on page 16 of the Issues Paper shows clearly how much PM_{10} particulate matter is emitted to air from coal mining in NSW each year[4]. In the 5 years from 2009/10 to 2013/14, more than half the PM_{10} emissions to air in NSW were from coal mining alone.

The NSW figures also reflect the national pollutant inventory figures for PM_{10}, which indicate that the two largest sources nationally are metal ore mining (450m kg per year) and coal mining (400 m kg per year)[5].

With respect to $PM_{2.5}$ the Issues Paper also discusses the significant levels of $PM_{2.5}$ particulates and their association with coal mining in the Hunter Valley[6]. As with PM_{10} particulates, the national pollutant inventory figures for $PM_{2.5}$ indicate clearly the major contribution of the mining industry to $PM_{2.5}$ pollution[7]. The second and third largest sources of pollution are coal mining (7.3m kg per year) and metal ore mining (5.9m kg per year).

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[2] European Environment Agency, The European Environment State and Outlook 2015, cross-country comparison on air pollution, available at: www.eea.europa.eu/soer-2015/countries-comparison/air
[3] NSW Government, Consultation Paper Clean Air for NSW, October 2016, www.epa.nsw.gov.au/air/clean-air-nsw.htm
[4] NSW LBL Scheme Issues Paper, Fig 3-4 Trends in PM_{10} emissions to air by source, p 16
[5] www.npi.gov.au/npidata/action/load/summary-result/criteria/source-type/ALL/subthreshold-data/Yes/substance/70/substance-name/Particulate%20Matter%2010.0%20um/destination/ALL
[6] Issues Paper, pages 16-18
[7] www.npi.gov.au/npidata/action/load/emission-by-source-result/criteria/substance/92/destination/ALL/source-type/ALL/substance-name/Particulate%2BMatter%2B2.5%2Bum/subthreshold-data/Yes/year/2015

Given the significant contribution that the coal mining and metal ore industries make to PM_{10} and $PM_{2.5}$ pollution, these must be listed as assessable pollutants for mining activities under the LBL Scheme.

We support the suggestion in the Issues Paper that there may be an opportunity to improve the consistency of substance classifications within the scheme, for example by defining PM_{10} as coarse particulates and $PM_{2.5}$ as fine particulates, consistent with international nomenclature. Under this new nomenclature both PM_{10} and $PM_{2.5}$ should be assessable pollutants for mining for coal, petroleum exploration and production, and electricity generation.

National Clean Air Agreement

NSW has recently committed to the National Clean Air Agreement[8], which aims to *"ensure a continued and strengthened approach to air quality management in Australia".* The National Clean Air Agreement strengthens the Ambient Air Quality Standards for PM_{10} and $PM_{2.5}$ in the National Environment Protection (Ambient Air Quality) Measure. The new AAQ NEPM Ambient Air Quality Standards for $PM_{2.5}$ are 8µg/m3 (average annual – i.e. long term) and 25µg/m^3 (24-hour – i.e. short term).

The Issues Paper indicates that predictive modelling commissioned by the EPA (Pacific Environment 2014) anticipates that an annual average $PM_{2.5}$ Ambient Air Quality Standard of 8 µg/m^3 is unlikely to be attained in Singleton and Muswellbrook into the future as coal production in the Hunter Valley is expected to continue to increase (Box 3-2 Issues Paper).

This shows that NSW will not be able to meet its commitments to the National Clean Air Agreement unless it includes airborne pollutants from mining for coal and minerals. We strongly agree with the suggestion in the Issues Paper that "Adding mines to the LBL scheme and including $PM_{2.5}$ as an assessable pollutant could be part of the solution to ensuring that any AAQ NEPM Ambient Air Quality standard for $PM_{2.5}$ can be met" (Box 3-2 Issues Paper).

Other air pollutants

- **VOCs, NOX and SOX:** Secondary particle precursors such as sulphur dioxides and nitrogen dioxides, as well as volatile organic compounds, are released into the atmosphere from coal mining and should be included as assessable pollutants for coal mining under the LBL Scheme. Coal fired powers stations are by far the largest emitters of SO_X and NO_X and have not reduced emissions under the existing LBL scheme. On the contrary, the Bayswater coal fired power station's SO_X emissions rose 17% in the last NPI reporting period.

- **Metals and other trace elements:** A variety of toxic trace elements including arsenic, boron, cadmium, chromium, fluorine, mercury, molybdenum, lead and selenium are found in Australian coal. These elements have known adverse health effects and can be released into the atmosphere and water resources from coal mining and coal powered electricity generation. The LBL Scheme covers a number of these trace elements in air pollution from electricity generation including arsenic, benzo(a)pyrene, fluoride, lead, mercury, nitrogen oxides and sulfur oxides (other trace elements are covered in water pollution - see below). However, because mining for coal is not covered by the LBL scheme, trace elements released during the coal mining and transport process (e.g. coal dust) are not captured by the LBL Scheme. This should be rectified.

[8] www.environment.gov.au/protection/air-quality/publications/national-clean-air-agreement

Despite mercury emissions from coal power stations being covered by the scheme, it is still emitted in large quantities. Bayswater power station for example emitted 240 kg of mercury in the 2014-15 NPI reporting period, or 14 kg/TWh. This is 2.4 times higher than the allowable limit for mercury emissions from existing power plants in the USA of 13 lb/TWh[9]. The LBL must be amended to drive adoption of mercury pollution control measures at power stations which are conspicuously and negligently absent.

- **Carbon Dioxide and Methane:** Given the failure of both State and Federal governments to take strong action on climate change, consideration should be given to including carbon dioxide and methane as assessable pollutants under an expanded LBL scheme for electricity generation, coal mining and petroleum exploration and production. We note that this was also suggested by licensees under the LBL Scheme, who recommended that "Greenhouse gases have an environmental impact and should be added to the scheme. This includes carbon dioxide, methane and nitrous oxide" (see Issue Paper, Appendix C, 2014 LBL Industry survey).

WATER QUALITY

The Issues Paper notes that water discharges from mining activities can have high levels of salinity and metals[10]. Trace elements from coal mining that can end up in water include arsenic, boron, cadmium, chromium, fluorine, lead, mercury and molybdenum. We also note that coal mines are the main sources of water-based pollution in NSW for cobalt and nickel. In our view, water pollution from coal mines is not adequately regulated, with mines being permitted to discharge water directly into creeks and rivers, with little monitoring or regulation – see case studies below.

We strongly support including assessable water pollutants for coal mining as part of the LBL Scheme.

We would also support the inclusion of cobalt and nickel as assessable pollutants in the LBL Scheme, noting they are currently not assessable pollutants for any activity.

CASE STUDIES – Impacts on Water

Springvale Mine

The Springvale mine, near Lithgow, is licenced to discharge mine affected water into waterways, including those feeding the Coxs river, which flows through the Blue Mountains World Heritage Area and into the Warragamba dam, which is part of the Sydney Drinking Water Catchment. NCC member group, the Blue Mountain Conservation Society, commissioned testing of the Coxs River and found high levels of heavy metals including zinc, copper and manganese. Despite additional requirements imposed by the EPA to monitor toxic metals discharged from the mine, the mine has been found to be in breach of its licence. Additional regulation via the LBL Scheme could provide additional incentives to discourage the mine from continuing to discharge contaminated water.

Clarence Mine

The Clarence Mine discharges water into the Wallangambee river, which has been found to elevate levels of heavy metals such as cobalt, magnesium, nickel, sulphur and zone. Again, load-based

[9] US EPA Mercury and Air Toxics Standards (MATS) for Power Plants available at: https://www.gpo.gov/fdsys/pkg/FR-2012-02-16/pdf/2012-806.pdf
[10] Issues Paper, p 19

licencing may provide a strong deterrent for mining companies to release contaminated water into our waterways.

Hunter irrigation water

The Hunter River below the confluence of Glennies Creek provides a major source of irrigation water for the Hunter Valley vineyards. There is a real risk that the high concentration of mining activities in the Hunter Valley is impacting on the water quality of the river, and the water used for irrigation. Additional protection for the Hunter River and irrigation water for these vineyards could be provided by including water pollutants from coal mining as assessable pollutants in the LBL scheme.

CRITICAL ZONES

The Issues Paper analysis shows that the use of critical zones appears to be working well, particularly where LBL fees are proportionally higher due to critical zone weightings, than in unweighted areas.

We suggest that critical zones can be used to address the significant impacts from air and water pollution in areas heavily impacted by the coal mining and coal fired power stations, including the Hunter Valley and in particular Singleton and Muswellbrook. For example, we support the suggestion that higher pollutant fees for $PM_{2.5}$ could be charged for licensees around highly populated areas and areas impacted by industrial activities (such as Singleton and Muswellbrook) where the ambient air quality standards 'may not be met in the near future'[11].

FEES

We do not believe that the fees set by the LBL Scheme provide sufficient enough deterrent for industries to clean up their act on pollution.

For example, licensees provided feedback that fees did not necessarily change behaviour, as LBL fees are not a big enough cost to consider in upgrade cost–benefit analyses and upgrades for production growth and avoiding licence non-compliances are bigger drivers of emission reductions than LBL fees (see Issue Paper, Appendix C, 2014 LBL Industry survey).

Further, while electricity generation is covered by the LBL Scheme, including coal-fired power station, air pollution from coal fired power stations has not reduced and continues to pose serious health risks. Doctors for the Environment have recently raised concerns on this issue, supporting a significant increase in LBL fees for coal-fired power stations, due to significant human mortalities associated with air pollutants originating from power stations[12].

NSW coal-fired power stations emit large quantities of SO_X and NO_X, creating a significant health burden on our state. This is not the case in other jurisdictions with effective pollution controls. By increasing the fees to levels more reflective of the health burden, the LBL scheme can drive installation of pollution controls into NSW coal-fired power stations which are widely used around the world. For example, SO_2 emissions from German coal fired power stations are 0.33 kg/MWh[13], more than ten times lower than power stations

[11] Issues paper, p17
[12] www.sbs.com.au/news/article/2016/12/15/doctors-call-pollution-fee-rise-nsw
[13] Australian Academy of Technological Sciences and Engineering, The Hidden Costs of Electricity (2009)

in the Hunter Valley, which emit a disastrous 4.3 kg SO_2/MWh on average. SO_2 pollution from the two power stations in the Hunter Valley is estimated to cause $250 million in health costs each year[14].

CONCLUSION

Air and water pollution from coal mining, coal-fired power stations and associated activities is having significant impacts on the environment and communities of NSW particularly in areas where coal mining and power generation is concentrated such as the Hunter Valley, Central Coast and Illawarra. There is a significant gap in the regulation of pollution as mining for coal is not captured by the LBL Scheme. This is in direct contrast to the polluter pays principle, and the purpose of the LBL Scheme. All pollutants for which coal and mineral mining are major contributors should be listed as assessable pollutants under the LBL Scheme. Further consideration should be given to also using critical zones to address pollution concerns in areas where there are significant impacts from the high concentration of coal mining and power generation activities

As part of the review, consideration should also be given to raising licence fees under the LBL Scheme to provide a greater deterrent for polluting activities. In considering an appropriate fee level, consideration should be given to the costs of pollution which are currently borne by the community, including health costs, climate and environmental costs.

[14] Pollution loads from NPI 2014-15, health cost coefficient and population exposure estimates from Australian Academy of Technological Sciences and Engineering, The Hidden Costs of Electricity (2009)