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**Submission: load based licensing review discussion paper**  
***Submission by 350.org Australia***

**SUMMARY OF RECOMMENDATIONS**

1. In the absence of a national economy wide carbon price, we strongly recommend inclusion of carbon dioxide and methane as assessable pollutants for electricity generation, coal mining and petroleum exploration and production.
2. The fee attached to all pollutants regulated by the scheme needs to be substantially increased to create a real financial incentive for pollution reductions.
3. Scheduled activity 'mining for coal' should be covered by the LBL scheme. New South Wales has the biggest coal mining industry of the country with the most intensive pollution contribution to the land, air and water of the region.
4. The pollutants for which coal mining is a major contributor in New South Wales should be listed as assessable pollutants for coal mining including, pollution to air by PM 10, PM 2.5, VOCs, arsenic, PAHs and NOX and pollution to water by chromium, selenium, arsenic and lead.
5. The particulate pollutants of size PM2.5 should be included in the load-based licensing scheme and listed as an assessable pollutant for coal mining, petroleum exploration and production and electricity generation.
6. The load-based licensing scheme should undertake management of the Hunter Valley towns of Muswellbrook and Singleton as a "Critical Zone"
7. The LBL fee be set at a constant rate, removing the fee rate threshold. This recognises that a Kg of pollutant is equally harmful whether it comes from a relatively clean or dirty facility.
8. The proposal "Remove the current administrative/load fee discount – all LBL licensees pay the applicable administrative fee and load fees" be implemented.

**OVERVIEW**

350 Australia is one part of a global movement taking action to halt the climate crisis. We work with a network of campaigners and local groups across the country to help coordinate online campaigns, grassroots organising, and mass public actions to keep fossil fuels in the ground and support a transition to a cleaner, healthier and fairer society.

The number 350 means climate safety: to preserve a liveable planet, scientists tell us we must reduce the amount of CO<sub>2</sub> in the atmosphere from its current level of 400 parts per million to below 350 ppm.

Thank you for the opportunity to comment on the discussion paper for the EPA's load based licensing review. We believe that the scheme is an important component of the regulatory system in New South Wales to help manage the health and environmental impacts of pollution. We welcome and endorse the view in the Issues Paper that a "strengthened and better targeted load-based licensing scheme" will help to address the environmental and health impacts of the state's air pollution. Delivering on the second objective of the review "improve the effectiveness of the LBL scheme in driving reductions in air and water pollutant emissions" will be critical to its success and must be approached with a broad perspective to encompass all assessable pollutants, pollutants that should be included in the scheme and consider what other activities should be considered under the scheme.

Though the principles and architecture of the scheme is largely sound, we do not think in its current state the scheme is being used effectively to achieve pollution reductions and appropriate air quality for communities across the state. Our recommendations above are made in the belief they will facilitate a significant reduction in the output of toxic pollution into the environment with the ensuing health, ecological and community benefits.

In particular we pay attention to the major power generators and coal miners in the state. These companies and facilities are producing considerable amounts of pollution and are either not covered by the scheme or paying miniscule amounts for the pollution they produce - so little that it barely makes a blip on the financial radar of these companies. It's simple reckoning that to achieve pollution reductions through an incentive based scheme, the fees must be high enough to create a true incentive to drive behaviour and technological change away from recklessly pumping harmful pollutants into the air and water.

Also of concern to 350.org Australia is the pressing need to deal with NSW's carbon footprint and that greenhouse gas emissions should be recognised under the scheme due to the known and calculable human and economic impacts of a changing climate. Specifically we suggest that the LBL scheme needs to be expanded to include carbon dioxide and methane as assessable pollutants for electricity generation, coal mining and petroleum exploration and production.

We recommend that the scheme be expanded to include the pollution caused by scheduled activity "Mining for Coal". This hugely significant source of pollution, which spans across the Hunter, Blue Mountains, Namoi, Lake Macquarie and the Illawarra, does not have any assessable pollutants listed in the schedule for the load based licensing scheme despite the extreme quantities of pollution produced.

## **SUPPORTING POINTS TO THE RECOMMENDATIONS**

### **Greenhouse Pollution and the Climate Imperative**

The need for urgent climate action has never been so clear. In Australia, the Climate Council has regularly reported on the impacts of a changing climate.

In 2015 it reported that:

- It is beyond doubt that human activities, primarily the emission of greenhouse gases from the combustion of fossil fuels like coal, oil and gas, are driving the dramatic changes of the climate system;

- Climate change is increasing the frequency and severity of many extreme weather events, including heatwaves and extreme bushfire conditions; and
- Hot days have doubled in the last 50 years, while heatwaves have become hotter, last longer and occur more often. (Climate Council, 2015)

The increase in frequency of natural disasters provides another imperative. According to the Asian Development Bank, “in the last 4 decades the frequency of natural disasters recorded in the Emergency Events Database has increased almost three-fold”. (Asian Development Bank, 2015 - Page 7).

It is clear that to protect our climate, fossil fuel emissions must be urgently constrained. This conclusion flows from the landmark paper by leading climate scientist James Hansen (2013) and his colleagues. This paper states: “continuation of high fossil fuel emissions, given current knowledge of the consequences, would be an act of extraordinary witting intergenerational injustice.”

Despite the urgency of the climate challenge, Australia’s emissions have begun to rise again, particularly in the electricity sector, with an increase of 3% in 2014-2015 (Climate Council, 2016) and as far as reducing the emissions of heavy emitters such as coal fired electricity generators are concerned, there is a gaping hole in Australian climate change policy.

As climate change impacts intensify in Australia and around the world, the time window in which to reduce carbon dioxide equivalent emissions and prevent further devastating climate impacts narrows. Limiting and regulating carbon dioxide and methane emissions is a crucial and urgent first step.

We welcome the NSW Government’s stated ambition to be carbon neutral by 2050, as outlined in the *Climate Change Policy Framework*. In lieu of strong Federal targets and policies for carbon reduction, NSW (the most carbon polluting state of the country) can show further leadership in this area by using the scheme to establish an intermediary mechanism to regulate and decrease CO<sub>2</sub>e emissions. This recognises the known human and economic impacts of carbon emissions in driving climate change and the many flow on impacts to human health and the economy.

We suggest imposing a per kilogram load-based licence to significant emitters of CO<sub>2</sub> and CH<sub>4</sub> and setting the fee rate at a level reflective of the social cost of carbon pollution, as well as complementary action to apply load limits on these greenhouse pollutants.

- The United States EPA estimates of the social cost of CO<sub>2</sub> ranged from US\$11 to US\$105 per tonne of CO<sub>2</sub> in 2015, increasing to between US\$26 and US\$212 per tonne of CO<sub>2</sub> by 2050 (US Government, 2015)
- It has been suggested the true social cost of carbon dioxide is in fact much higher, with a recent Stanford (Moore & Diaz 2015) study pegging it at up to \$315 per tonne.

## **Air pollution and health**

The toxic pollutants produced by coal-fired power stations and other heavy emitters, such as sulfur oxides, nitrous oxides, hydrochloric acid, mercury and fine particulate matter (PM2.5), are extremely harmful to human health. The Climate and Health Alliance (CAHA, 2012) cites that air pollution from coal power generation is associated with respiratory, cardiovascular and nervous system diseases. It is estimated that these impacts cost the Australian health system \$2.6 billion each year (Biegler, 2009). CAHA reports the annual costs of associated health damages from the five New South Wales coal fired power stations in the Hunter Valley at around \$600 million per annum.

For two towns in the Hunter Valley, the burden of health damages is estimated at \$47 million in Singleton and \$18.3 million in Muswellbrook each year from exposure to fine particles (PM2.5) emitted from coal mines and coal fired power stations into the area. These particles travel deep into the lungs and pass into the bloodstream, posing a risk of stroke and heart attacks. (CAHA 2015)

Despite these alarming figures, the Climate Council found that little comprehensive and independent research into the health impacts of Australia's coal fired power has been conducted (Climate Council, 2014). Given that most of Australia's power plants are situated near significant populations, this is a major failure by industry and governments.

During 2016, fine particle pollution concentrations have exceeded the national standard at 21 of the 26 locations where it's monitored, and coarse particle pollution (PM10) has gone over the limit at 25 of 43 locations. Particle pollution is expected to increase by 65% in the next 20 years. Clearly, more needs to be done, especially in communities that are unfairly exposed to the worst pollution.

By reducing industry induced air pollution there will be significant health benefit for communities, and a reduced strain on Australia's health care system. It is important that the effectiveness of the scheme isn't measured along narrow lines in a cost-benefit-analysis. On page 28 of the Issues Summary it is suggested that

*“the extent to which the scheme's benefits to the community (from avoided environmental and health damage) outweigh the costs to industry (from reducing pollution and complying with the scheme's requirements), and the cost to government for administering the scheme.”*

It is important to recognise the difference between the penalty a company may have to pay for releasing a harmful pollutant and the value of human health – both current and future. In other words - there's little comfort or fairness to an individual or community being told that the cost to you and of treating your illness is less than the cost of industry making the necessary changes to reduce pollution and protect your health. The principle, after all, is that the 'polluter pays'.

## **Critical zone for Muswellbrook and Singleton**

Because of the close proximity of the mines to each other and to the Liddell and Bayswater power stations, there is an urgent need for the EPA to create a “critical zone” for the particulate and sulfur pollution in the Hunter, in addition to the NOX and VOC critical zone already in place in the Singleton and Muswellbrook local government areas. The cumulative load of air pollution in the Hunter is unacceptable.

For example, the Bayswater Power station has had a 376% increase in PM10 emissions over the past 5 years and a 118% increase in PM2.5 over the same period.

We believe that there is a case for this critical zone to also be the subject of additional complementary actions. These include imposition of load limits on the biggest mines and power stations for air pollution and introduction into the EPLs of concentration limits for a range of substances.

### **Loading rates and fees**

The load-based licensing scheme was designed to reduce pollution in NSW, and is promoted by the NSW Environment Protection Authority (EPA) as an important incentive-based mechanism to encourage major industries to reduce their pollution.

For the scheme to be effective polluters need to have a big enough incentive to reduce pollution rather than a minor punishment for not changing. It is clear from the results of the licensee survey and the review by ACIL that the fees across the scheme are too low. Respondents in the licensee survey told the EPA that LBL fees are not a big enough cost to consider in upgrade cost-benefit analysis: LBL fees were less than the cost of upgrading equipment in 84% of the cases.

Taking Bayswater Power Station, NSW's largest generator per annum, as an example demonstrates the point.

**Table 1. Air pollution load from Bayswater**

From 2009 to 2015 there has been a significant increase in pollutant loads across the board from the Bayswater Power Station. Given the plants proximity to Muswellbrook and Singleton, and AGL Energy's plans to operate it until 2035, there is a pressing need to reign in the stations pollution load. However, there are currently few incentives to do this, given there are no limits applied in AGL's EPL and the fees paid are miniscule (see below).

<b>Pollutant (kg)</b>	<b>2009/10</b>	<b>2010/11</b>	<b>2011/12</b>	<b>2012/13</b>	<b>2013/14</b>	<b>2014/15</b>	<b>5 year change</b>
<b>SO2</b>	73,000,000	62,000,000	73,000,000	63,000,000	59,000,000	76,000,000	<b>4%</b>
<b>NOx</b>	38,000,000	34,000,000	43,000,000	38,000,000	42,000,000	50,000,000	<b>32%</b>
<b>PM<sub>2.5</sub></b>	110,000	49,000	330,000	520,000	130,000	240,000	<b>118%</b>
<b>PM<sub>10</sub></b>	210,000	110,000	430,000	930,000	860,000	1,000,000	<b>376%</b>
<b>Mercury</b>	54	45	43	41	210	240	<b>344%</b>
<b>Fluoride</b>	93,000	100,000	660,000	340,000	560,000	500,000	<b>438%</b>

**Table 2. Fees paid by Bayswater**

This analysis of Bayswater Power Station's emissions data, demonstrates the insignificance of the fees incurred for the pollution produced, indicating why there has been significant increases across most pollutants. In 2014-15, Bayswater emitted the following air pollutants to generate each MWh of electricity: 4.4 kg SO<sub>2</sub>, 2.9 Kg NO<sub>x</sub>, 0.06 Kg PM<sub>10</sub>, 0.000013 Kg mercury, 0.03 Kg fluoride.

Pollutant (kg)	Amount	Pollutant weighting	Zone weighting	Fee unit value	Fee/MWh cents
SO <sub>2</sub>	4.4	2.2	1	\$44.78	4.3
NO <sub>x</sub>	2.9	9	2	\$44.78	23.5
PM <sub>10</sub>	0.06	125	1	\$44.78	3.4
Mercury	0.000013	110000	1	\$44.78	0.7
Fluoride	0.03	84	1	\$44.78	1.1
<b>TOTAL</b>					<b>32.95</b>

*Formula: Amount x weighting x Zone x Fee unit divided by 10,000= fee  
Table compiled by Doctors for the Environment Australia*

In 2014 the average wholesale price for a MWh of electricity was \$36, so the fee was 0.92% of the sale price. It is no wonder the system has been ineffective in reducing emissions output from Bayswater and the other power stations. It's clear that the pollutant fees need to be significantly increased to drive a change in practice at the station.

We strongly support removal of the Fee Rate Threshold – recognising it is illogical and creates an unnecessary distortion to apply different FRT factors for the same pollutant depending on the scheduled activity. Along the same lines, we also support the removal of the administrative/load fee discount.

#### **Coal Mining should be covered by the LBL scheme.**

The scheduled activity 'mining for coal' is responsible for a significant proportion of the emissions of a variety of damaging pollutants in New South Wales with the state home to the largest coal mining industry of the country and the most intensive pollution contribution to the land, air and water of the region. Specifically, coal mining contributes 75% of total PM<sub>10</sub> pollution in the air, 75% of total chromium pollution in water, selenium to water (71%), arsenic to water (61%), PM<sub>2.5</sub> to air (51%), VOCs to air (31%), arsenic to air (23%), PAHs to air (23%), lead to water (23%) and NO<sub>x</sub> to air (16%). It is clear mining for coal should be covered by the scheme to help protect the long term health and environment of NSW's mining regions.

## **REFERENCES**

- Asian Development Bank, 2015. Global increase in climate-related disasters / Vinod Thomas and Ramon Lopez. November 2015.  
<https://www.adb.org/sites/default/files/publication/176899/ewp-466.pdf>.
- Biegler, 2009. Tom Biegler. The hidden costs of electricity: externalities of power generation in Australia, Report for the Australian Academy of Technological Sciences and Engineering (ATSE), 2009.  
<https://www.atse.org.au/Documents/Publications/Reports/Energy/ATSE%20Hidden%20Costs%20Electricity%202009.pdf>
- Bureau of Resources and Energy Economics (BREE), 2012, Resources and Energy Statistics, Canberra, Australia.
- CAHA, 2012. Our uncashed dividend: the health benefits of climate action. A briefing paper prepared by the Climate and Health Alliance and the Climate Institute. August 2012.  
<http://www.climateinstitute.org.au/articles/publications/our-uncashed-dividend-briefing-paper.html>.
- CAHA, 2014. Coal and health in the Hunter: Lessons from one valley for the world.  
[http://d3n8a8pro7vhmx.cloudfront.net/caha/legacy\\_url/53/Climate-and-Health-Alliance\\_Report\\_Layout\\_PRINTv2.pdf?1439938112](http://d3n8a8pro7vhmx.cloudfront.net/caha/legacy_url/53/Climate-and-Health-Alliance_Report_Layout_PRINTv2.pdf?1439938112).
- Climate Council, 2014. Health effects of coal.  
<http://www.climatecouncil.org.au/uploads/d2b6cbbfff522e700c99f3c4e3c0aee0.pdf>.
- Climate Council, 2015. Climate change 2015: growing risks, critical choices.  
<https://www.climatecouncil.org.au/uploads/301336ea755b13fc4d6e49568e0141b2.pdf>
- Evans G R, 2008, "Transformation from 'Carbon Valley' to a 'Post-Carbon Society' in a climate change hot spot: the coalfields of the Hunter Valley, New South Wales, Australia," *Ecology and Society* 13(1): 39.  
<http://www.ecologyandsociety.org/vol13/iss1/art39/>
- Hansen, 2013. James Hansen et al. Assessing "dangerous climate change": required reduction of carbon emissions to protect young people, future generations and nature. *PLOS One*, Volume 8, Issue 12, December 2013.  
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0081648>.
- Moore F, Diaz D. 2015. *Temperature impacts on economic growth warrant stringent mitigation policy*, *Nature Climate Change*.
- United States EPA. 2015. *Social Cost of Carbon Factsheet*. Interagency Working Group on Social Cost of Carbon. <https://www3.epa.gov/climatechange/Downloads/EPAactivities/social-cost-carbon.pdf>