lighter footprints

climate change neighbourhood action group

Lighter Footprints submission

Inquiry into the Environment Protection Authority

Lighter Footprints is a large climate action group based primarily in the Boroondara and Whitehorse council areas of Victoria, encompassing, Box Hill, Kew, Hawthorn, Camberwell, Canterbury, Surrey Hill and some parts of Ashburton, Glen Iris and Burwood.

Lighter Footprints welcomes the opportunity to comment on this first comprehensive review of the EPA's role and power since its establishment in 1971 and commends the Victoria Government for enabling this review

Carolyn Ingvarson
Convenor, Lighter Footprints
30 October 2015

1.0 Scope and focus of this submission

"Climate change is increasingly acknowledged as the most significant future "pollution" problem facing communities across the world"

Discussion paper,
Ministerial Advisory Committee for the Inquiry into the Environment Protection Authority, August 2015.

We agree. Global warming is already reaping havoc across the world, most obviously with disruptive weather events like Superstorm Sandy, including disastrous floods, droughts and cyclones in our part of the world such as Typhoon Haiyan and our own Cyclone Yasi.

While scientists do not typically attribute single events to climate change, they do make it very clear that global warming increases the likelihood of disruptive, dangerous events, often characterised as putting weather "on steroids".

Australia, with its arid centre, climactic pattern of droughts and flooding rains and a huge coastal seaboard, and which is situated in a region of low lying islands and populous developing nations, is particularly vulnerable to the disruption, destruction, and the consequent chaos, conflict and destabilisation that global warming will increasingly bring.

Each of the last three decades has been globally hotter than the one before and that pattern holds true for Australia. The Bureau of Meteorology reported in January 2014 that 2013 was Australia's warmest year on record: the 2013 annual national mean temperature was +1.20°C above average.

Climate scientists predict that Victoria will become drier, as well as hotter, as the world warms and that our rains will become less predictable and heavier when they do fall - a fate that bodes ill for us all.

Victorians already have bitter experience of what global warming means. We don't have to ponder long to recall the disastrous Hazelwood mine fire, the deadly 2009 bush fires and the unprecedented and ominous early start to this year's bushfire season. Or the long drought that preceded and paved the way for the 2009 fires that claimed 173 lives[1], 414 people injured and an extra 374 people who died from heat stress around that time[2]. Or the January 2014 heatwave that saw Melbourne experience a new and unwelcome record of four days over 41 degrees C, more untimely heat stress deaths and transport chaos as train lines buckled.

For all these reasons, Lighter Footprints endorses the view that global warming is the mother of all environmental threats, complicating and compounding existing problems. A warming and drying climate will inevitably further stress rivers and aquifers, fragile soils and ecosystems, hasten species extinction, increase salinity and coastal erosion and make good farming land marginal. The dangers are legion, interconnected and sinister.

This grim view is shared by climate scientists around the world and it is the view we heard expressed repeatedly at the community forums run by the EPA Inquiry's Ministerial Advisory Committee.

Our submission therefore focuses solely on climate change and the EPA's role in abating greenhouse gas emissions.

We leave it to other environmental organisations to make submissions about more traditional and continuing threats to air, water and soils from industrial pollution, over-development etc.

The new Victorian Government has made it clear that it wishes to once more be a leader on climate change and we see the EPA as a crucial organisation to help achieve this aim.

1 https://en.wikipedia.org/wiki/Black_Saturday_bushfires
2 http://www.abc.net.au/environment/articles/2014/09/04/4081144.htm

We welcome this increased ambition and note that a stronger more proactive EPA role on climate change can be made possible if the Victorian Government adopts much stronger climate change legislation.

We endorse the calls from several major Victorian environment organisations for revised climate legislation which includes: a State Climate Charter, a Victorian Climate Change Authority, a Victorian Clean Energy Finance Corporation and also establishes strong emissions targets for Victoria.

Recommendation:
That addressing climate change and in particular the emission of greenhouse gases from power generation, industry and transport becomes a top priority and core function of the EPA.

2.0 What acting on climate change means for the EPA

Coal-fired power stations are the world's largest source of global warming carbon dioxide emissions. We need rapid de-carbonisation to preserve a safe climate.

But so far, Australia has charted an erratic climate policy course that has achieved dangerously little. Australia, because of its dependence on coal, still has the highest per capita emissions in the developed world. And Victoria, with its overwhelming dependence on brown coal is the dirtiest state in the dirtiest of developed countries. Shamefully, since the-abolition of the carbon tax, brown coal emissions have risen in Victoria after previously falling for two years.

The Baillieu/Napthine Government compounded these policy failures at state level, reversing climate initiatives of previous Governments, including neutering the EPA's powers to effectively regulate greenhouse gases and abolishing the state's emissions target.

According to a recent article by Mark Ludlow in the Australian Financial Review, a new report from consulting and accounting firm PwC (*Report urges tougher carbon policies*, Australian Financial Review article, 13/10/15) warns that the Federal Government will be forced to toughen its carbon polices following the global talks in Paris this year to meet its modest stated target of a 26 to 28 per cent cut in carbon emissions by 2030 This is modest compared to the 40-60% recommendation from the Climate Change Authority.

PwC estimates that the Australian Government will have to double its historic rate of de-carbonisation from an annual rate of 2.6 per cent this century to 4.4 per cent until 2030 to meet its stated targets.

This may be a tough ask but it is also clear to those who follow the science that Australia's new targets are still woefully inadequate as a fair

contribution to the desperately urgent global task of keeping the world below 2 degrees C of warming.

Australia's Climate Change Authority estimates that a fair and achievable target would be 19 per cent cut on 2000 levels by 2020, which should then increase to a 30 per cent cut by 2025 and 40 to 60 per cent below 2000 levels by 2030.

These targets might seem very ambitious to policy makers and politicians but whatever way you cut it, Australia, and Victoria in particular with its brown coal emissions, has to step up mightily and urgently as part of the global effort.

The laws of physics don't change to suit the politics of the day and we are now dependent on the wisdom and courage of all our appointed leaders to do what needs to be done in the short time we have left to safeguard the planet from runaway climate change that spirals out of human control and which is irreversible in human time scales.

To make up for lost time, Victoria must rapidly de-carbonise its dirty power supply, and also make greater efforts (including advocacy at the national level) to cut transport emissions and other sources of greenhouse emissions.

Between them, electricity generation (53 %) and transport (16 %) make up 69 % of Victoria's greenhouse emissions[3].

In the USA, the national equivalent of Victoria's EPA has played a vital role in the battle to cut emissions in a country similarly split between political parties that have opposing climate policies.

Victoria's neutered EPA is not currently equipped to do the same.

However, we believe a revitalised EPA, with a stronger remit as a regulator of air pollution, could – and should – have an absolutely crucial role to play

3 Report on Climate Change and Greenhouse Gas Emissions in Victoria
Published by the Victorian Government Department of Sustainability and Environment
Melbourne, March 2012.

like its US counterpart in regulating greenhouse gases.

Under the Environment Protection Act 1970, the far-sighted Victorian Government of the day gave the EPA the power to force compliance with standards prescribed under the Act in relation to emission of wastes into the atmosphere. This included the power to force compliance with standards in relation to "any greenhouse gas substance emitted or discharged into the atmosphere."

Recommendation:

That the EPA's power to regulate greenhouse gases from new and existing power plants be reactivated and that it be given the legislative power, financial resources and enforcement powers that it needs to carry out this function through mandatory CO_2 reduction levels.

2.1 Regulating CO_2-e emissions from coal-fired power stations

Australia, and Victoria in particular, has some of the oldest, least efficient and most carbon- intensive power stations in the world. It will be no great loss to hasten their inevitable closure in a fair, transparent and predictable way, provided cleaner energy is encouraged to come on line fast enough to ensure security of supply.

Given the current over supply of electricity and the high costs of keeping old plant working, the more enlightened power companies may indeed welcome a transparent plan for a gradual, predictable closure of dirty power plants so they can make sensible economic decisions about whether to upgrade or close and when to increase investments in clean power.

Power demand looks set to drop further, following the recent closure of the Point Henry aluminium smelter and as the car industry closes down between 2016 and 2017, exacerbating the problem of oversupply.

Already at least one major company has publicly accepted the need to de-carbonise. AGL, Australia's largest generator of coal-fired electricity, has said it will close all its coal-fired power stations by 2050,

We think climate science clearly dictates that this transition should be much faster than this, but it does reflect a welcome public acknowledgement at last of the inevitability of closure.

Victoria can learn useful lessons from what other countries have done to cut emissions, now and in the future.

In the UK, Prime Minister David Cameron has pledged to close all unabated coal-fired power station by the mid-2020s. Despite some doubt this will happen without a stronger price on carbon and other appropriate energy policies to help realise this objective, 6 out of 16 power stations have already chosen to opt out under stricter **clean air** standards set by the European Union. Another one chose to opt out after initially opting in.

A useful reference, describing UK policy in detail, is a report from Imperial

College published in October 2014, London, called: *Could retaining old coal lead to a policy own goal?*

As the report spells out, the UK has introduced an **emissions performance standard** (EPS) for **NEW coal-fired power stations** which are allowed to emit up to 450g CO_2/kWh, which is half the level of an unabated coal plant. This standard will effectively prevent the establishment of new coal-fired power stations that lack the ability to capture and store carbon emissions. In Victoria a limit of 800g CO_2/kWh was in place until removed by the former State Government in March 2012.[4]

In relation to existing power stations, we note that the discussion paper released by the EPA Inquiry committee (page 28) , cited the **Canadian regulations** which now apply greenhouse gas performance standards to coal fired power stations at the time they reach the end of their useful life, which it says is generally 50 years of age. This performance standard is same as the standards required for new power stations being built.

" The effect of these regulations will be to require the oldest generators to either be retired or retrofitted with modern carbon capture and storage equipment", the discussion paper says.

Given the climate emergency coupled with the fact that Australia's power stations are particularly inefficient and that Victoria's power stations use dirty brown coal, we contend that Victorians cannot be expected to wait until 50 years of existing dirty, inefficient power station operation is up before the state enforces higher greenhouse gas performance standards from its coal-fired power stations.

The US is employing a mixture of methods to cut emissions. Like the UK and Canada, new unabated coal-fired power stations cannot be built. The standard is set high enough[5] at 635g CO_2/kWh to also effectively require new coal-fired power stations to employ carbon capture and storage.

The US federal government has also set national emissions targets which require the country to cut carbon emissions by 26%-28% below 2005 levels in 2005.

4 http://www.theage.com.au/victoria/no-emission-limit-on-new-coal-plants-20120327-1vwmu.html
5 http://www.c2es.org/federal/executive/epa/ghg-standards-for-new-power-plants

To meet these national goals, states are given individual targets based on their history and circumstances and must devise their own plan to meet these allocated targets.

Like the UK, the US does not require existing power stations to meet carbon emissions standards. But also like the UK, it does use clean air legislation to require existing power stations to continuously upgrade to meet new clean air standards which often, when coupled with the increasing competition from gas and renewable energy, brings forward the decision to close.

Recommendations:

That NEW coal-fired power stations meet Victorian emission performance standards that require them meet a 635g CO_2/kWh emissions limit.

That EXISTING coal-fired power stations are required to meet new stepped performance emissions standards.

That these EXISTING power stations are given due notice (say one year) of the introduction of these new stepped standards and then have a set period in which to meet these new standards (which can be averaged across the Victorian power plants owned by one company). Alternatively, they can opt to close after a certain specified number of hours of operation or to close no later than the end of the set period, whichever comes first.

That at the end of each set period, the emissions performance standards are raised again. The stepped rise in emissions standards could be in one-year steps (see example below) or a longer period, but the steps would be designed to ensure all existing plants are closed or upgraded to the standards required of new power stations well before the last Latrobe Valley mining licence expires in 2037

We give the following example of how one-year stepped carbon-intensity standards might apply to existing power plants over 5 years.

2016: introduction of new climate legislation and advance notice of new

emission performance standards, laid out in one year steps (for a minimum of five years at a time).

2017: all existing power stations must nominate by 31 December 2017 which of three options they choose to meet in 2018.

These three options are:

- for all plant owned by a company to meet the new carbon intensity standard by 31 December 2018 or

- to begin a staged closure for the non-complying plant that will not be upgraded. The remaining plant must meet the required standard when averaged across all Victorian power coal-fired power plant owned by the company or

- to operate any non-compliant plant for a specified number of hours and then to cease operation, closing by 31 December 2018 at the latest. These hours of operation would be specified by the EPA and would be based on independent advice about the state's predicted power requirements for the year in question and the speed at which cleaner energy alternatives were expected to become available.

The continuing power plants would notify the EPA by 31 December of every year which option they were choosing for the following year.

One-year carbon emission performance targets could be set at a carbon intensity standard of say: 1. 5 Tonne per MWh CO_2-e by 31 December 2018, 1.43 by 31 December 2019, (Hazelwood, with an emissions intensity of 1.41 in 2013/14 would upgrade or close) 1.38 by 31 December 2020, 1.35 by December 2021 and 1.31 by 31 December 2022 (Yallourn with an emission intensity of 1.33 in 2013/2014 would upgrade or close).

As can be seen above, Hazelwood and Yallourn are Victoria's two dirtiest power stations and, under this standards regime, would be the first to be closed/upgraded.

There is enough excess power in the system for Hazelwood to close

immediately with no detrimental effect on power supplies[6]. The mine licences for both plants expire in 2026 and should not be renewed, with new CO_2-e standards ideally requiring them to close or upgrade well before then as in the example above.

Loy Yang A is the largest brown coal-fired power station in the Latrobe Valley, delivering a nominal 30 per cent of base load requirement, with a CO_2-e per MWH of 1.16. The new CO_2-e emission standards should be designed to ensure it closes no later than 2037 when its mining licence expires and preferably well before then if renewable energy and /or gas can plug the hole its closure would cause.

The same applies to Loy Yang B, which is much smaller but is Victoria's most modern brown coal-fired power station. Nevertheless, it is much dirtier than gas or even black coal and should be closed as soon as it can be replaced by renewables and/ or gas. Both should be closed and replaced by cleaner energy well before the 2050 deadline envisaged by AGL, which is the owner of the larger Loy Yang A.

2.2 Regulating other emissions from coal power stations and coal mines

As we understand it, the EPA is responsible for enforcing legally binding national standards for air pollution. Nationally regulated air pollutants include carbon monoxide, nitrogen oxide, ozone, sulfur dioxide, lead and particles PM10, with an advisory standard for PM2.5.

Five air toxics are also undergoing "monitoring investigation" with a view to setting national standards eventually. These toxics are: benzene, formaldehyde; benzo (a) pyrene as a marker for Polycyclic Aromatic Hydrocarbons; toluene; and xylenes.

However, it appears each state is responsible for enforcing air emissions standards, presumably in accord with the national standards, as part of its licence conditions for sites like power stations where health impacts can be

6 http://www.aemo.com.au/Electricity/Planning/Archive-of-previous-Planning-reports/~/media/Files/Other/planning/esoo/2014/ESOO%20Update/2014_Electricity_Statement_of_Opportunity_Complete_Document.ashx "between 1,100 MW and 3,100 MW of capacity could still be withdrawn from each of New South Wales, Queensland, and Victoria without breaching the reliability standard"

severe

For instance, according to a paper released by the Climate Council (called *Health Effects of Coal in Australia, September 2014)* "the risk of premature death for people living within 50 kilometres of coal-burning power plants can be as much as three to four times that of people living at a greater distance". This is clearly scandalous in an age when much cleaner sources of energy are available.

Health risks from coal include lung cancer, bronchitis, heart disease and other health conditions, according to the council.

The people living in the Latrobe Valley are entitled to the same quality of air (and soil and water) as those living elsewhere and national air standards should be regularly monitored and enforced at Latrobe Valley coal mines and power stations and in surrounding areas up to at least 50 km from these mines and power stations.

Recommendations:
That regular air, water and soil quality monitoring should occur at and around every coal mine and power station in the Latrobe Valley.

That the EPA should be adequately staffed and financed to conduct this regular monitoring. It should be conducted by EPA staff, not outside consultants.

That the results of this regular monitoring should be made publicly available and made available to the local press in the Latrobe Valley.

That where power station emissions do not reach national air quality standards, they should be forced to comply over a five year timetable, meeting higher standards each year (in a fashion similar to that suggested for regulating CO_2-e) until they meet national standards. If they do not meet their yearly targets, they should close.

2.2.1 Regulating other toxic air pollutants from coal mines and power stations

We are concerned that Australia, and Victoria, still leaves much to be desired when it comes to regulating the known highly toxic substance of mercury and is not meeting world best practice standards, despite Australia being a signatory to the *Minamata Convention on Mercury* which it has yet to ratify.

According to the World Health Organisation, exposure to mercury - even small amounts – may cause serious health problems and is a threat to the development of the child in utero and early in life.

Mercury may have toxic effects on the nervous, digestive and immune systems, and on lungs, kidneys, skin and eyes.

Mercury is considered by the WHO as one of the top ten chemicals or groups of chemicals of major public health concern.

It becomes a danger when it settles in waterways and oceans and people are mainly exposed to mercury when they eat fish and shellfish that contain it.

Although mercury is a natural occurring compound that exists in various forms, human activity is the main cause of mercury releases, particularly coal-fired power stations and other industrial activities like aluminium smelting and gold mining.

The Australian Government Fact Sheet on Mercury Emissions includes in its priorities the employment of "best practice to control atmospheric mercury emissions"[7] but despite this worthy aim, our national and state authorities are failing this test of meeting world best practice.

The US EPA Clean Air Act requires coal fired power plants to meet a Mercury and Air Toxic Standards (MATS) of .09 grams per GWh, but power stations at Loy Yang emit 1.94 grams per GWh.

This is despite the fact that the technology to remove mercury from coal-fired power generation is proven and well understood (e.g. See the *Cleaner*

7 http://www.npi.gov.au/system/files/resources/908420c9-79d3-4080-8a46-53cc98ef58bc/files/factsheet-mercury.pdf

Power Plants publication from the US EPA).

We are aware that Australian coal power generators claim that emissions are low compared to overseas plants. It is true that black coal emits more mercury than brown coal with NSW coal power plants emitting on average 2.64 grams per GWH. However, as has already been noted, brown coal plants like those at Loy Yang, emit more than the standard required in the US.

Recommendation

That the Victorian Government, with the help of the EPA, advocate that Australia ratify the Minamata Convention on Mercury and advocate a national standard for atmospheric mercury that matches world best practice.

We also endorse the following recommendation on mercury submitted by one of our members Jim Oates in a separate submission to the inquiry.

That Coal Fired Power Stations in Victoria be required to limit mercury pollution to at least the levels required by the US MATS. That is 0.09 grams of mercury per GWh.

We are aware that the industry claims that if it is forced to adopt US -based mercury emissions reduction technologies, new and existing coal-based plant would cease to be competitive and the withdrawal of such assets from the market would lead to significantly higher wholesale electricity prices.

This is patently untrue as the east coast grid currently has an excess of capacity and Victoria in particular has an excess of up to 3100 MW of generating capacity[8]. This is a fig leaf to hide their inaction in lowering mercury emissions to best practice standards.

8 http://www.aemo.com.au/Electricity/Planning/Archive-of-previous-Planning-reports/~/media/Files/Other/planning/esoo/2014/ESOO%20Update/2014_Electricity_Statement_of_Opportunity_Complete_Document.ashx "between 1,100 MW and 3,100 MW of capacity could still be withdrawn from each of New South Wales, Queensland, and Victoria without breaching the reliability standard"

Given that mercury is also emitted by other human activities, such as the aluminium smelting industry, we suggest that all relevant industry should also be required to upgrade plant to meet world's best practice.

We therefore also endorse the following recommendation made by Jim Oates in his separate submission to the EPA inquiry.

Recommendation:

That Non Ferrous Metal Production Facilities notably Aluminium be required to limit mercury pollution to similar levels as required by the US MATS.

2.3 Problems associated with stronger regulations for coal emissions

As previously noted, coal generators may welcome some rationalisation of the coal industry if it mean a reduction in the oversupply of power. However, while generators may want the number of plants to decrease in Victoria, they will not want their own plant/s to close if it/they can still make a profit.

Making a profit is problematic for some of the oldest, least efficient power stations given the costs of keeping their plant running. Some also lack the retail customer base that could support them with the higher prices extracted from retail customers.

We endorse the view of the current federal government that compensation for closure should not be paid to generators. It is also not the practice in the UK or the US. This makes economic sense and it also makes moral sense. There is no case for compensating companies which have chosen to invest in coal-fired generation in full knowledge that carbon dioxide was a major cause of global warming and that governments would be forced eventually to control greenhouse gas emissions.

We note that some coal-fired power station like Anglesea have already

made the commercial decision to close. This is to be welcomed and encouraged.

While it may not have been easy for power stations to predict the drop in power demand, this is a normal everyday business risk and the current oversupply means governments should encourage decisions to close as more renewable energy comes on line.

Recommendation:

That, given increased EPA regulation of coal-fired power stations is entirely predictable as is the encouragement of cleaner forms of power supply, the Victorian government should therefore not pay compensation for closure.

The cost of mine remediation is sometimes seen as a major hurdle that would cause power generators to mothball rather than close power stations that are no longer competitive or able to upgrade plant to meet higher emissions performance standards.

The disastrous Hazelwood fire in worked-out areas of the Hazelwood mine illustrates the dangers of power generators which fail to meet their obligation to carry out mine remediation.

The Age newspaper recently reported that the owners of the Hazelwood coal mine could face criminal charges under state environment laws for the smoke and ash that smothered the town of Morwell during the month-long fire that endangered the health of residents.

The paper reported that that under the EPA Act, some of the charges open to the authority include:

- causing or permitting an environmental hazard
- causing or permitting pollution of the atmosphere
- aggravated pollution

These charges carry maximum fines each from about $350,000 to up to $1.5 million, depending on the offence.

These fines are clearly inadequate to deter power generators from failing to adequately maintain and remediate mines as are the bonds required to be posted for remediation.

For instance, the environmental repair task at Victoria's Hazelwood plant has been estimated to be as high as $483 million, dwarfing the bond of just $15 million paid by the company.

Recommendations

That much greater fines, commensurate to the damage that fires and other risks from poorly maintained plant and mines may cause, be imposed on companies that breach their licences.

That the necessary legislation be passed to allow the EPA to take companies that breach their licences to the County Court where these greater financial penalties can be imposed.

That much greater bonds be imposed on power plants commensurate with the cost of mine remediation.

That the EPA be given the finances and staff it needs to regularly monitor and enforce ongoing mine maintenance and remediation as areas of mines are worked out or abandoned.

That the Victorian Government, on behalf of the EPA, back the recent call for a national audit of the costs of mine remediation and compulsory levies on coal miners, made by the Australian Greens.

That the EPA conduct a similar audit in Victoria and consider compulsory annual levies on coal mines to go into a central fund to help contribute to remediation. This would mean that the first coal plant to close would have somewhat less incentive to mothball rather than close as it could apply for some financial help from the central fund.

That the plants which cannot meet emissions standards are forced to close and remediate mines and are not allowed to merely mothball their plants.

2.4 Regulating CO_2 emissions from transport

Regulating light vehicles for CO_2 looks like a no brainer. After all, transport

emissions made up 16 per cent of Australia's greenhouse emissions in 2012, according to the Climate Change Authority, and light vehicles contributed 57 Mt CO_2-e of the total 90 Mt CO_2-e of transport emissions for that year.

Carbon dioxide emission performance standards have not been imposed in Australia, unlike overseas and in the US.

Unlike coal-fired power stations which can theoretically at least be fitted with carbon capture and storage, cars cannot be modified in this way.

Thus the focus has turned to making cars more fuel efficient so that less carbon is emitted per kilometre travelled. One of the paradoxes of introducing fuel efficiency standards overseas has been to increase the popularity of diesel cars which get more km per litres of fuel and which are cheaper to run but which emit slightly more CO_2 per km and other noxious gases and particles which are exceedingly dangerous to health (see section 2.5).

According to the Climate Change Authority, which favours the introduction of a CO_2 standard, the Australian Federal Chamber of Automotive Industries, agreed to a code of practice with a voluntary fuel consumption target of 6.8L/100 km (which was equivalent to about 160g CO_2 for a petrol vehicle and 187g CO_2 for a diesel). A subsequent voluntary target of 222g CO_2/km was met in 2008 but not renewed.

Recommendations:

That the EPA advocate for the adoption of a national standard for vehicle CO_2 emissions as proposed by the Climate Change Authority. The standard, proposed in the CCA's 2014 report, was to reach 105g CO_2/km by 2025.

That after introduction, the Victorian EPA test this standard for cars sold in Australia for on-road compliance with the standard.

2.5 Regulating other emissions from transport

Since the early 1970s Australia has had road vehicle standards in place for new vehicles. The current standards control emissions of carbon monoxide, hydrocarbons, oxides of nitrogen and particulate matter in the vehicle exhaust.

The effect of these air pollutants on human health is well described in the following extract from the website of the Vehicle Certification Agency (VCA) of the UK Department for Transport:

CO - Carbon monoxide reduces the blood's oxygen-carrying capacity which can reduce the availability of oxygen to key organs. Extreme levels of exposure, such as might occur due to blocked flues in domestic boilers, can be fatal. At lower concentrations CO may pose a health risk, particularly to those suffering from heart disease.

NOx - Oxides of nitrogen include nitrogen dioxide (NO_2) and nitrogen oxide (NO): NO reacts in the atmosphere to form nitrogen dioxide (NO_2) which can have adverse effects on health, particularly among people with respiratory illness. High levels of exposure have been linked with increased hospital admissions due to respiratory problems, while long-term exposure may affect lung function and increase the response to allergens in sensitive people. NOx also contributes to smog formation, and acid rain, can damage vegetation, contributes to ground-level ozone formation and can react in the atmosphere to form fine particles ('secondary particles').

Particulate matter (PM) - Fine particles have an adverse effect on human health, particularly among those with existing respiratory disorders.

Particulate matter is associated with respiratory and cardiovascular problem. 29,000 deaths a year in the UK are attributable to fine particulate pollution.

HC - Hydrocarbons contribute to ground-level ozone formation leading to risk of damage to the human respiratory system. Some kinds of hydrocarbons, in addition, are both carcinogenic and indirect greenhouse gases

In an article on air pollution on their current website, Environmental Justice Australia states that 'over 3000 Australians a year die from long-term and short term exposure to air pollution. It affects the health of thousands of others, as well as harming the natural environment and increasing greenhouse emissions.'

According to the Commonwealth Department of Industry and Transport[9], 'motor vehicles are one of the major emitters of air pollutants in urban Australia, contributing more than 80% of the CO emissions, 60-70% of the NOx and up to 40% of the HCs'.

Light petrol vehicles are the major transport contributors to CO, HC and NOx emissions.

Light diesel vehicles, while smaller in number than petrol light vehicles, are especially dangerous to health as they tend to emit NOx at a higher rate per vehicle relative to petrol vehicles (and are permitted to do so under vehicle emissions standards) and their numbers are growing, increasing the health risks to the general population and particularly to those who live or work near busy roads and intersections.

Australia has more than doubled its number of diesel vehicles in the past five years. The health implications are extremely serious. Diesel emissions from cars contain dangerous particles (PM 2.5 and PM 10) and a group of gases known as nitrogen oxides (NOX), including the particularly toxic nitrogen oxide (NO2).

These have been linked to respiratory diseases, including asthma, bronchitis, emphysema and cardiovascular disease.

9 Department of Infrastructure and Transport – Final regulation impact statement for Review of Euro 5/6 Light Vehicle Emissions Standards November 2010 (Section 1.3). https://www.comlaw.gov.au/Details/F2011L02016/Supporting%20Material/Text

In 2012, the World Health Organisation reported 3.7 million premature deaths worldwide attributable to air pollution. The same year, the International Agency for Research on Cancer (IARC) classified diesel exhaust as a No1 carcinogen.

A recent study[10] found motor vehicles contribute about 30% of particulate pollution in Melbourne. PM levels tend to be highest near busy roads and levels and sometimes fail to meet Australian particle standards.

According to a recent Saturday Paper article: "People in health research and automotive circles have suggested 2000 to 3500 deaths each year in Australia could be linked to diesel emissions, more than the national road toll on either estimate" (*The fresh pinch on clean air,* by Sophie Morris, Saturday Paper, October 17-23).

This just isn't good enough.

Australia has adopted European light vehicle standards in the past long after they have been adopted in Europe. The lag is caused by the reluctance of Australian Government to inflict additional, expensive demands for engine redesign on local car manufacturers.

However, local car manufacturing will cease before mid-2017 when the highest Euro 6 standard will come into force for all new light vehicles sold in Australia. That standard has recently come into force in Europe.

The lag in adopting overseas standards means that Australia has not only dirtier cars manufactured here, but is also a dumping ground for new vehicles produced overseas to standards already superseded there but still acceptable in Australia.

Recommendation:

That the EPA advocates for best practice European standards to be required for new and second-hand cars imported into Australia from 2016, so that Australia does not become a dumping ground for more polluting cars.

10 EPA Victoria (2006): *Review of air quality near major roads.* Publication 1025. February 2006. Environment Protection Authority Victoria.

The recent huge "diesel-gate" scandal over the rigging of VW diesel cars to meet laboratory tests for required emissions standards that they did not meet in on-road conditions has highlighted the crucial role of monitoring and enforcement agencies like the EPA.

In some cases, on-road testing in the US found VW diesel cars were emitting 10 to 40 times the required standard of some emissions and there are suspicions that other diesel cars may be equally non-compliant and putting the general population at risk.

Victoria's EPA has diesel testing facility for buses and trucks but not for cars and does not undertake real life testing for diesel vehicles, including cars.

Recommendations:

That the EPA be involved in testing of all popular models of imported and locally manufactured diesel cars in on-road conditions to see if they meet current standards.

That the EPA advocates for world best practice standards for all light vehicles to be adopted at national level in Australia.

That the EPA regularly monitor the levels of NO_X, NO_2 and dangerous particles at busy city and suburban sites and report those to the public as well as to the national air quality authorities and federal and state health authorities.

That the EPA advocates for diesel emission standards that are the same as those for all vehicles.

That the EPA recommend to local authorities where pollution levels are found to exceed national standards near dwellings, that a local ban on diesel traffic be instituted.

3.0 Summary of Recommendations

RE core function and powers of the EPA

Recommendations:

That addressing climate change and in particular the emission of greenhouse gases from power generation, industry and transport becomes a top priority and core function of the EPA.

That the EPA's power to regulate greenhouse gases from new and existing power plants be reactivated and that it be given the legislative power, financial resources and enforcement powers that it needs to carry out this function through mandatory CO_2 reduction levels.

RE power generation

That NEW coal-fired power stations meet Victorian emission performance standards that require them meet a 635g CO_2/kWh emissions limit.

That EXISTING coal-fired power stations are required to meet new stepped CO_2 performance emissions standards.

That these EXISTING power stations are given due notice (say one year) of the introduction of these new stepped standards and then have a set period in which to meet these new standards (which can be averaged across the Victorian power plants owned by one company). Alternatively, they can opt to close after a certain specified number of hours of operation or to close no later than the end of the set period, whichever comes first.

That at the end of each set period, the emissions performance standards are raised again. The stepped rise in emissions standards could be in one-year steps (see example below) or a longer period, but the steps would be

designed to ensure all existing plants are closed or upgraded to the standards required of new power stations well before the last Latrobe Valley mining licence expires in 2037.

That regular air, water and soil quality monitoring should occur at and around every coal mine and power station in the Latrobe Valley.

That the EPA should be adequately staffed and financed to conduct this regular monitoring. It should be conducted by EPA staff, not outside consultants.

That the results of this regular monitoring should be made publicly available and made available to the local press in the Latrobe Valley.

That where power station emissions do not reach national air quality standards, they should be forced to comply over a five year timetable, meeting higher standards each year (in a fashion similar to that suggested for regulating CO_2-e) until they meet national standards. If they do not meet their yearly targets, they should close.

That the Victorian Government, with the help of the EPA, advocate that Australia ratify the Minamata Convention on Mercury and advocate a national standard for atmospheric mercury that matches world best practice.

That Coal Fired Power Stations in Victoria be required to limit mercury pollution to at least the levels required by the US MATS. That is 0.09 grams of mercury per GWh.

That Non Ferrous Metal Production Facilities notably Aluminium be required to limit mercury pollution to similar levels as required by the US MATS.

That, as increased EPA regulation of coal-fired power stations is entirely predictable as is the encouragement of cleaner forms of power supply, the Victorian government should therefore not pay compensation for closure.

That much greater fines, commensurate to the damage that fires and

other risks from poorly maintained plant and mines may cause, be imposed on companies that breach their licences.

That the necessary legislation be passed to allow the EPA to take companies that breach their licences to the County Court where these greater financial penalties can be imposed.

That much greater bonds be imposed on power plants commensurate with the cost of mine remediation.

That the EPA be given the finances and staff it needs to regularly monitor and enforce ongoing mine maintenance and remediation as areas of mines are worked out or abandoned.

That the Victorian Government, on behalf of the EPA, back the recent call for a national audit of the costs of mine remediation and compulsory levies on coal miners, made by the Australian Greens.

That the EPA conduct a similar audit in Victoria and consider compulsory annual levies on coal mines to go into a central fund to help contribute to remediation. This would mean that the first coal plant to close would be somewhat less likely to mothball rather than close as it could apply for some financial help from the central fund.

That the plants which cannot meet emissions standards are forced to close and remediate mine sites, etc. rather than merely mothball their plants.

RE transport

That the EPA advocate for the adoption of a national standard for vehicle CO_2 emissions as proposed by the Climate Change Authority. The standard, proposed in the CCA's 2014 report, was to reach 105g CO_2/km by 2025.

That after introduction, the Victorian EPA test this standard for cars sold in Australia for on-road compliance with the standard.

That the EPA advocates for best practice European standards to be required for new and second-hand cars imported into Australia from 2016, so that Australia does not become a dumping ground for more polluting cars.

That the EPA be involved in testing of all popular models of imported and locally manufactured diesel cars in on-road conditions to see if they meet current standards.

That the EPA advocates for world best practice standards for all light vehicles to be adopted at national level in Australia.

That the EPA regularly monitor the levels of NO_X, NO_2 and dangerous particles at busy city and suburban sites and report those to the public as well as to the national air quality authorities and federal and state health authorities.

That the EPA advocates for diesel emission standards that are the same as those for all vehicles.

That the EPA recommend to local authorities where pollution levels are found to exceed national standards near dwellings, that a local ban on diesel traffic be instituted.