



Submission

in response to

Senate inquiry into retirement of coal fired power stations

prepared by

Environmental Justice Australia

10 November 2016

## **About Environmental Justice Australia**

Environmental Justice Australia (formally Environment Defenders Office Victoria) is a not for profit environmental law practice. We provide advice and representation on public interest environment issues and advocate for improved environmental laws.

Submitted to:

Senate Standing Committees on Environment and Communications

## Introduction

Thank you for the opportunity to make a submission to this inquiry.

Environmental Justice Australia was instrumental in calling for a judicial inquiry into the Hazelwood mine fire and we provided legal advice and representation for community members in the first and second inquiries, particularly in relation to demonstrating that people in the Latrobe Valley community died premature deaths from the pollution impacts from the fire.

Since that time we have provided ongoing support to community members in understanding and advocating to prevent health impacts from the coal power stations and coal mines in the area. We are also advocating for better air pollution laws at the state and federal level to protect the health of communities and the environment.

Our submission focuses on the health impacts on local communities of coal fired power stations and the health benefits that can occur if these very significant sources of air pollution are retired.

Communities living in close proximity to coal fired power stations and coal mines are subject to significant environmental injustice. 2% of Victoria's population lives in the Latrobe Valley, and yet they bear the health burden of generating 85% of Victoria's electricity from aging and highly polluting coal-fired power stations. The Latrobe Valley therefore has for decades been bearing an unfair burden for generating electricity from which the whole of Victoria benefits. This is the same for other communities in Australia living close to coal-fired power stations.

The recent announcement of the closure of Hazelwood power station has caused significant anxiety for some in the Latrobe Valley community, particularly those directly affected by job losses. In part this anxiety stems from the long lasting economic impacts of the very badly managed privatisation of the power stations in the 1990's. It is essential that transition away from coal power in the Latrobe Valley and elsewhere be accompanied by transition plans that ensure that the environmental injustices suffered by those communities for decades from increased pollution are not compounded by new social injustices. Governments must ensure that:

- actions are taken well before power station closure to create local jobs in sectors that will not create a new toxic legacy for the local community to suffer from;
- any mine sites and power station waste facilities are made safe and fully rehabilitated so they can be transformed into a lasting benefit to the community;
- transitions are funded and supported by state and federal governments and the power station owners.

Environment Victoria has produced an excellent report on the key elements of a transition plan and we support the ideas expressed there.<sup>1</sup>

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<sup>1</sup> Environment Victoria, *Life after coal – pathways to a just and sustainable transition for the Latrobe Valley* 2016 <http://environmentvictoria.org.au/newsroom/report/life-after-coal>

We will address two terms of reference in particular in this submission.

**(a) the experience of closures of electricity generators and other large industrial assets on workers and communities, both in Australia and overseas;**

Coal-fired power stations emit a range of toxic substances that have serious impacts on the communities that live near them such as fine particle pollution (PM<sub>2.5</sub>) nitrous oxides and sulphur dioxide. All three of these pollutants are extremely harmful to health, causing and worsening a range of medical conditions such as asthma, respiratory problems, heart attack, and cancer.<sup>2</sup> Children and elderly people are particularly affected. Although some pollutants such as fine particle pollution can travel great distances, it is the local community that suffers the worst. People that live within 50kms of coal-fired power stations face a risk of premature death as much as 3–4 times that of people living further away.<sup>3</sup>

International Energy Agency, a relatively conservative body that is made up of the key energy-producing and consuming countries around the world, has recognised the severe health impacts from coal-fired power generation. In a report released this year<sup>4</sup> it noted that in developed countries such as Australia, pollution from coal-fired power is one of the top two biggest air pollution killers. It stated that without significant new regulation, pollution from energy generation in most countries will continue to rise, resulting in more deaths. It recommended that inefficient old power stations be closed, and that stringent pollution limits be imposed on all remaining power stations. Importantly though, the IEA stated that the simplest way to tackle air pollution is to not produce the pollutants in the first place – by switching to renewables.

**The Latrobe Valley**

As shown in the graph below. 95% of air pollution in the Latrobe Valley is from burning coal.<sup>5</sup>

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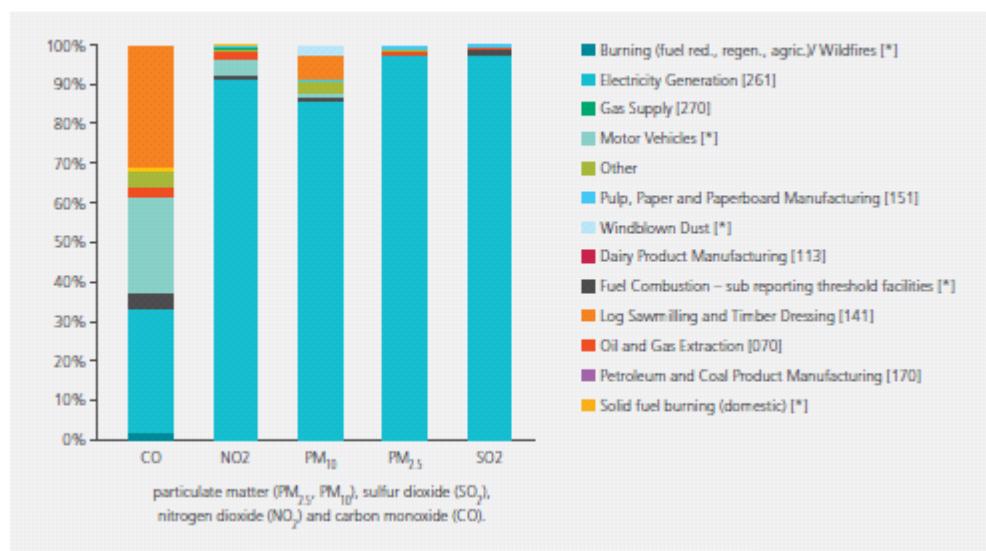
<sup>2</sup> Casteleden W, et al, *The mining and burning of coal: effects on health and the environment* MJA 195 (6) · 19 September 2011.

<sup>3</sup> Epstein PR, Testimony for the Kentucky General Assembly, House of Representatives Committee on Health and Welfare. London, Kentucky: Kentuckians for the Commonwealth 2010  
[http://www.kftc.org/sites/default/files/docs/resources/dr\\_epstein\\_testimony.pdf](http://www.kftc.org/sites/default/files/docs/resources/dr_epstein_testimony.pdf)

<sup>4</sup> International Energy Agency Energy and Air Pollution 2016: World Energy Outlook Special Report 2016  
[www.iea.org/publications/freepublications/publication/weo-2016-special-report-energy-and-air-pollution.html](http://www.iea.org/publications/freepublications/publication/weo-2016-special-report-energy-and-air-pollution.html)

<sup>5</sup> Hazelwood Mine Fire Inquiry Report Vol III - Health Improvement p71  
<http://hazelwoodinquiry.vic.gov.au/201516-report/volume-iii-health-improvement/>

**Figure 6. Emission contribution to the Latrobe Valley air shed from industry and diffuse sources such as vehicles, wood-fires, windblown dust and bushfires.<sup>157</sup>**



Source: Hazelwood Mine Fire Inquiry Report Vol III - Health Improvement p71

The towns of Traralgon, Moe and Morwell are home to Australia's four most polluting coal-fired power stations, with Hazelwood power station in Morwell being Australia's oldest and dirtiest coal-fired power station. Collectively, the Hazelwood, Yallourn and Loy Yang A and B power stations emit more than 4 million kilograms of dangerous fine particle pollution (PM<sub>2.5</sub>), 79 million kilograms of nitrous oxides and 122 million kilograms of sulfur dioxide each year.<sup>6</sup>

It has been estimated that the air pollution from Hazelwood alone causes 18 premature deaths a year locally<sup>7</sup>.

### The Hunter Valley

There are five coal fired power stations in the Hunter Valley, which produce large quantities of pollutants which are hazardous to human health including particulate matter, sulphur dioxide, oxides of nitrogen, carbon monoxide, hydrochloric acid and volatile organic compounds.<sup>8</sup> The annual costs of associated health damages from the five coal fired power station in the Hunter Valley have been estimated at around \$600 million per annum.<sup>9</sup> Air pollutants from coal fired power stations travel long distances, with much of the PM<sub>2.5</sub> found in the Sydney airshed being from the Hunter Valley.

<sup>6</sup> Data from the National Pollutant Inventory 2014-15 available at [www.npi.gov.au/](http://www.npi.gov.au/)

<sup>7</sup> Ward J and Power M, Harvard Kennedy School of Government *Cleaning up Victoria's Power Sector: the full social cost of Hazelwood power station* 2015 <http://environmentvictoria.org.au/newsroom/report/cleaning-victoria%E2%80%99s-power-sector#VTR2TSGeDRY>

<sup>8</sup> Data from the National Pollutant Inventory

<sup>9</sup> Climate and Health Alliance, *Coal and health in the Hunter: Lessons from one valley for the world* 2015 <http://www.caha.org.au/projects/hunter-coal/>

The Climate and Health Alliance released an excellent report in 2015 summarising the health impacts and costs of coal in the Hunter.<sup>10</sup>

### Health benefits of closure

It is well established that there are health benefits for every tonne of pollution that a community is not exposed to, especially in relation to particulate matter pollution.<sup>11</sup> Reductions in pollution can result in immediate health benefits such as lower asthma rates and fewer hospital visits.

There are a number of examples from around the world that demonstrate this. For example:

- In 2001 coordinated effort by local governments around Launceston, Tasmania, culminated in the introduction of the Launceston Wood Heater Replacement Program which resulted in a significant reduction in PM<sub>2.5</sub> (the same pollutant that causes the most health impacts from coal fired power stations). This resulted in large and significant reductions in mortality for males in Launceston for cardiovascular and respiratory deaths.<sup>12</sup>
- The town of Libby, Montana, USA, replaced a portion of its high emission wood burning stoves with less emission intensive alternatives (1147 stoves were replaced) resulting in a 27.5% reduction in PM<sub>2.5</sub> concentrations in the winters immediately following the replacements. There were immediate health impacts on local children, with a 26.7% reduced incidence reported wheeze in children for correlating to the decrease in winter PM<sub>2.5</sub>.<sup>13</sup>
- A regulatory change in Hong Kong in 1990 required a change in fuel oil sulphur content levels, leading to an immediate reduction in ambient sulphur dioxide. A study found this led to a substantial reduction in seasonal deaths within the first 12 months, which then increased and peaked, and eventually reduced to the predicted levels. The study concluded there are both immediate and long term health benefits to such air quality controls.<sup>14</sup>
- The health impacts of PM<sub>10</sub> were studied in the Utah and Salt Lake Valleys in relation to the intermittent operation of a steel mill from 1985-1989. Findings were that “average hospital

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<sup>10</sup> Climate and Health Alliance, *Coal and health in the Hunter: Lessons from one valley for the world* 2015 <http://www.caha.org.au/projects/hunter-coal/>

<sup>11</sup> See for example Draft Variation to the National Environment Protection (Ambient Air Quality) Measure Impact Statement Prepared for National Environment Protection Council, July 2014 <http://www.environment.gov.au/protection/nepc/nepms/ambient-air-quality/variation-2014/impact-statement> and Department of Infrastructure and Transport, *Final Regulation Impact Statement for Review of Euro 5/6 Light Vehicle Emissions Standards*, Canberra (2010) pp55-57 [http://www.infrastructure.gov.au/roads/environment/files/Final\\_RIS\\_Euro\\_5\\_and\\_6\\_Light\\_Vehicle\\_Emissions\\_Review.pdf](http://www.infrastructure.gov.au/roads/environment/files/Final_RIS_Euro_5_and_6_Light_Vehicle_Emissions_Review.pdf).

<sup>12</sup> Johnston F et al, *Evaluation of interventions to reduce air pollution from biomass smoke on mortality in Launceston, Australia: retrospective analysis of daily mortality, 1994-2007* BMJ 2013; 346 :e8446

<sup>13</sup> Noonan C et al, *A rural community intervention targeting biomass combustion sources: effects on air quality and reporting of children's respiratory outcomes*, Occup Environ Med. 2012 May;69(5):354-60.

<sup>14</sup> Hedley A et al, *Cardiorespiratory and all-cause mortality after restrictions on sulphur content of fuel in Hong Kong: an intervention study*, Lancet. 2002 Nov 23;360(9346):1646-52.

admissions in Utah Valley for bronchitis and asthma were substantially higher when the steel mill was open than when it was closed".<sup>15</sup> (PM<sub>10</sub> is a significant air pollutant from coal mines, which are prevalent in many areas where coal fired power stations are located and therefore have an associated health impact on the community.)

- A study conducted comparing air pollution levels (ozone , nitrogen dioxide and PM<sub>2.5</sub>) and emergency room visits for asthma in Windsor, Ontario, Canada found statistically significant same-day results for children aged 2-14.<sup>16</sup>

Ultimately, if we continue to use coal to generate electricity we will continue to create toxic pollution which kills local communities. There is no technology that can be applied to coal to avoid that. The only way to prevent deaths and disease is to prevent the pollution from occurring by moving away from coal fired power generation.

**(d) policy mechanisms to give effect to a just transition for affected workers and communities likely impacted by generator closures, as agreed in the 'Paris Agreement', including:**

**(i) mechanisms to ensure minimal community and individual impact from closures, and**

**(ii) mechanisms to attract new investment and jobs in affected regions and communities;**

To date there has been minimal planning for the closure of coal fired power stations. The unplanned closure of power plants in regions where electric generation plays a significant role in the economy already begun to cause significant social upheaval with the recent announcement of the closure of Hazelwood power station. The likelihood of further coal plant closure is contributing to stress and anxiety and reducing economic certainty in the Latrobe and Hunter Valleys and other regions where Australia's electricity is generated.

To minimise community and individual impact from the closure of coal-fired power stations, community members need to be actively involved alongside industry and government stakeholders in the development, implementation and monitoring of transition plans. To safeguard social capital and build resilience during a significant social and economic transition, it is imperative upon governments to create institutional arrangements to facilitate adaptive management.

The principles and procedures of adaptive management have been embraced by Australian Governments but have not yet been implemented in the context of the coming energy transition. In brief, adaptive management treats public policy as an experiment and maximises opportunities for stakeholders learn from and modify policy interventions. This approach necessitates the creation of institutional arrangements that facilitate dialogue between community, industry and government stakeholders, a collaborative approach to community planning, and the adaptation of interventions

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<sup>15</sup>Pope C, *Respiratory hospital admissions associated with PM10 pollution in Utah, Salt Lake, and Cache Valleys*. Arch Environ Health. 1991 Mar-Apr;46(2):90-7.

<sup>16</sup> Szyszkowicz, Mieczyslaw and Kousha, Termeh. *Emergency department visits for asthma in relation to the Air Quality Health Index: A case-crossover study in Windsor, Canada*. Can J Public Health, [S.l.], v. 105, n. 5, p. e336-e341, jul. 2014

on the basis of rigorous monitoring and evaluation. These arrangements need to recognise the different values, priorities and perspectives held by different stakeholders, and meet the needs of all stakeholders to participate.

Deliberative processes to minimise social disruption need to be set in place as far as possible in advance of changes such as coal plant closures. Stakeholder engagement literature refers to this as 'upstream' engagement and underscores the importance of initiating dialogue before stakeholders' positions are locked in. Upstream engagement favours innovation, informs decision-makers and assesses policy options before key decisions are made. Following these principles, a representative 'transition' body would have been established in the Latrobe and Hunter valleys many years ago. Detailed transition plans would already have been developed and stakeholders would be in broad agreement about the timeline for closure and mechanisms to minimise upheaval.

There is an important role for the Australian Government in initiating, resourcing and steering these mechanisms for transition planning. State Governments have neglected this important work because they have a conflict of interest as owners and managers of many power plants and because of the political influence of corporate power generators.