



**Fw: Morwell Mine Fire Submission**

info to: [REDACTED]  
Sent by: [info@hazelwoodinquiry.vic.gov.au](mailto:info@hazelwoodinquiry.vic.gov.au)

13/05/2014 09:50 AM

Submission

----- Forwarded by [REDACTED] HAZELWOODINQUIRY on 13/05/2014 09:50 AM -----



Hazelwood Inquiry info/DPC@DTF  
11/05/2014 09:25 PM

To Hazelwood Inquiry  
info/DPC@DTF  
cc  
bcc  
Subject Morwell Mine Fire Submission

Title: Mr

First Name: Timothy

Surname: Martin

Organisation represented (if applicable): Australian Medical Students' Association

Email address: [REDACTED]

Home or office phone: [REDACTED]

Mobile: [REDACTED]

Content of submission (you can choose multiple): Response to fire by Public Health Officials, Other (please state)

If Other please state here: Health impacts of fire

Please select one of the following options: I acknowledge that my submission will be treated as a public document and may be published, quoted or summarised by the Inquiry.

Upload Submission:

<http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/formidable/AMSA-submission-Hazelwood-Mine-Fire-Inquiry.pdf>

<http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/formidable/HAZELWOOD-MINE-FIRE-INQUIRY-Submission-cover-sheet-AMSA.pdf>

User Information

[REDACTED]  
User-Agent (Browser/OS): Mozilla/5.0 (Windows NT 6.1; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/34.0.1847.131 Safari/537.36

Referrer:

<http://hazelwoodinquiry.vic.gov.au/make-a-submission/online-submissions/>



AMSA-submission-Hazelwood-Mine-Fire-Inquiry.pdf



HAZELWOOD-MINE-FIRE-INQUIRY-Submission-cover-sheet-AMSA.pdf

**HAZELWOOD MINE FIRE INQUIRY****Submission cover sheet**

Post your submission with this cover sheet to:

Submissions Hazelwood Mine Fire Inquiry  
PO Box 3460  
GIPPSLAND MC Vic 3841Email your submission with this cover sheet to [info@hazelwoodinquiry.vic.gov.au](mailto:info@hazelwoodinquiry.vic.gov.au).

Title: Mr	First Name: Timothy	Surname: Martin
Organisation represented ( <i>if applicable</i> ): Australian Medical Students' Association		
Email address:	[REDACTED]	
Postal address:	[REDACTED] North Balwyn, Victoria, 3104	
Telephone: [REDACTED]	Mobile: [REDACTED]	
<input type="checkbox"/> Origin and circumstances of fire <input type="checkbox"/> Measures by Hazelwood Coal Mine to prevent fire <input type="checkbox"/> Application and administration of regulatory regimes <input checked="" type="checkbox"/> <b><u>Other (please state): Health impacts of fire</u></b>	Response to fire by: <input type="checkbox"/> Hazelwood Coal Mine <input type="checkbox"/> Emergency Services <input type="checkbox"/> Environmental Agencies <input checked="" type="checkbox"/> <b><u>Public Health Officials</u></b> <input type="checkbox"/> Other Government Agencies	

**Confidentiality**

The Inquiry will consider all requests for confidentiality. Should you wish for your submission or parts of your submission, to be treated as confidential, please clearly state the reason in the space provided below. If you require more room, please attach a separate page and provide together with your submission.

Should the Inquiry consider the request for confidentiality not to be appropriate you will be provided with an opportunity to withdraw your submission or re-submit it in a form suitable for publication.

**Please select one of the following options**

**I acknowledge that my submission will be treated as a public document and may be published, quoted or summarised by the Inquiry**

**OR**

request that my submission or parts of my submission, be treated as confidential, and not published quoted or summarised by the Inquiry, for reasons stated below

## Acknowledgements

### I understand that:

- I can be contacted by the Inquiry in relation to my submission.
- Anonymous submissions will not be accepted.
- The name or town or suburb of each submitter will be identified as apart of every published submission. Other contact details will be removed before publishing.
- The Inquiry will not publish submission, if it believes that the submission material is or could be defamatory, offensive, contravenes, anti-discrimination or anti-vilification legislation or is outside the scope of the Inquiry's terms of reference



**Signature**

---

OR if sending electronically please confirm your acknowledgment by ticking by box  Date 11/05/2014  
This is an electronic submission



AUSTRALIAN  
MEDICAL STUDENTS'  
ASSOCIATION

## Australian Medical Students' Association Submission to the Victorian State Government Hazelwood Mine Fire Inquiry

The Australian Medical Students' Association (AMSA) is the peak representative body for Australia's 17,000 medical students. AMSA's key mandate is to connect, inform and represent students studying at each of the 20 medical schools in Australia. Furthermore, AMSA believes that all communities have the right to the best attainable health, and accordingly seeks to advocate on issues that may impact health outcomes. The Hazelwood Mine fire is likely to have resulted in health impacts to people of the Morwell community as well as contributed to health impacts of communities on a much broader scale. With this in mind, AMSA would like to make recommendations regarding the specified matters 4 and 5.

**Head Office**  
42 Macquarie St  
Barton ACT 2600

**Postal Address**  
PO Box 6099  
Kingston ACT 2604

**Phone** +61 2 6140 4556  
**Fax** +61 2 6273 0455  
**Email** [mail@amsa.org.au](mailto:mail@amsa.org.au)

**Website** [www.amsa.org.au](http://www.amsa.org.au)  
**Twitter** @yourAMSA

**ABN** 67 079 544 513

### **Key points**

- The negative health effects of long-term exposure to pollution from coal combustion are well known.
- The negative health effects of acute exposure to severe pollution from coal combustion have been studied less but it is likely that they would be significant.
- AMSA strongly recommends that the Board considers conducting a long-term health study into the consequences affected communities are likely to suffer as part of the inquiry.
- AMSA recommends that the Board inquires into the adequacy of current air pollution monitoring in the region around the Hazelwood Mine.
- AMSA recommends that the Board assesses the need for stronger enforcement of air pollution monitoring and prevention around communities in coal regions.
- AMSA strongly recommends that the Board inquires into the risks to health on communities from the continued use of coal-fired power generation

### **The direct health effects of exposure to pollution from coal combustion**

Coal combustion affects at least three of the nine National Health Priority Areas: cancer control, cardiovascular health and asthma. Every aspect of the life cycle of coal, including mining, preparation and combustion, is detrimental to human health (1). Combustion of coal produces small particulates less than 2.5µm and less than 10µm (PM<sub>2.5</sub> and PM<sub>10</sub>) as well

as carbon monoxide, methane, sulphur, nitrogen oxides and trace elements such as arsenic and mercury (1, 2).

The respiratory risks of exposure to these particulates include the development and exacerbation of asthma and chronic obstructive pulmonary disease (COPD), stunted lung development and lung cancer. Cardiovascular risks include ischaemic heart disease, dysrhythmias and heart failure and neurological effects include ischaemic stroke and developmental delay (1). In Europe, it has been estimated that greater than 24 deaths per TWh are directly attributable to power generated by coal (3). The health effects of lignite (brown coal) are greater, with an estimated 32 deaths per TWh (3). In Australia there has been little research into the health impacts of coal mining and power generation compared with Europe and the USA, however Doctors for the Environment Australia (DEA) estimates that they are similar (4).

Coal fires can present significant risks to human health and the environment and are found worldwide (2). Causes of coal fires include lightning strikes, forest fires, spontaneous combustion, accidents and arson (5). At regional and local levels, coal fires contribute to respiratory diseases and other health problems (6). There are limited studies of the health impacts of short term exposure to smoke from coal mine fires, however much can be deduced from studies of the health impacts of bushfires which result in increased rates of cardiac arrest and exacerbations of asthma and COPD (7).

Based on knowledge regarding the health effects of long-term exposure to coal combustion and the health effects of bushfires, it is likely that Morwell residents have and will continue to experience negative health effects from exposure to air pollution from the Hazelwood mine fire. Thus AMSA recommends that the Board considers the necessity of long-term health study to assess the health effects experienced by the Morwell community as part of the inquiry of the adequacy and effectiveness of responding to the effects on and risks to the affected communities.

The Hazelwood Mine fire has brought to light the acute severe risks to communities in coal-fired power generation regions. As already discussed, the use of coal-fired power generation presents health risks to communities during regular production. Thus AMSA wishes to make further recommendations based on health matters that are incidental to the risks to affected communities.

### **Monitoring the impacts of coal mines and generators**

A report by DEA has found that state governments have failed to effectively consider and monitor the health impacts of current and future coal developments (8). Concerns in Victoria in addition to the Hazelwood

mine fire include the other coal mines and five brown-coal-fired power stations in the Latrobe Valley.

The DEA report finds that air within this area exceeds current sulphur dioxide standards and air monitoring is inadequate as it fails to detect PM<sub>2.5</sub> particulates. Particulates of this size are of great concern as they have the ability to enter the lungs and be absorbed into the bloodstream (9). DEA is also concerned about the current health impacts of the open cut coal mine and coal-fired power plant at Anglesea.

AMSA recommends that the Board inquires into the adequacy of the current air monitoring around the Hazelwood Mine as well as the associated power generators in the Latrobe Valley region. AMSA also recommends that the Board assesses the need for more stringent monitoring of air pollution by coal power generators and uphold strong regulations of air pollution to protect the health of local residents.

### **The health effects of climate change**

Australia's continued use of coal-fired power generation as well as uncontrolled coal fires also cause further harm to human health through their contributions to climate change. In 2009, the highly esteemed international medical journal, *The Lancet* described climate change as the "greatest threat to human health of the 21<sup>st</sup> century" (10).

The most recent report from the Intergovernmental Panel on Climate Change has estimated that the global average temperature has increased by 0.85 degrees Celsius from 1880 to 2012 (11). The IPCC has concluded that without further mitigation the average global surface temperature will increase by 3.7 to 4.8 degrees Celsius in 2100 compared to pre-industrial levels (12). To have a 75% chance of remaining within the internationally agreed limit of 2 degrees Celsius, between 2000 and 2049, emissions must be limited to below the equivalent of 1000 Gt of carbon dioxide (13).

The health risks of global climate change are many and varied. They include direct health risks of heatwaves and extreme weather events as well as effects on the geographical distribution of infectious diseases, food yields and access to fresh water (14).

For Australia an increase in global temperature will result in more heatwaves, which threaten vulnerable populations in our society like the young, the old and the already ill. We are already experiencing and are likely to continue to see an increase in frequency and severity of extreme weather events such as cyclones, floods, storms and bushfires which have the potential to devastate the health of communities directly as well as the health infrastructure that supports them (15).

Climate change also threatens to shift the profile of infectious diseases, including food-borne, water-borne and mosquito-borne illnesses such as dengue fever and Ross River fever which are currently confined only to northern parts of Queensland (15).

There are also predicted constraints on water resources in southern Australia and a significant impact on agriculture in the Murray-Darling Basin as well as far south-west and south-east Australia. Australians will also experience the psychological and social effects especially in rural areas as a result of failing industries such as agriculture and tourism as a result of climate change (15).

### **Healthy energy systems for the future**

To reduce further and more severe health effects of coal-fired power Victoria must expand its renewable energy generation. Mitigation of climate change by increasing renewable energy sources will result in health co-benefits for Victorian communities, especially those in the Latrobe Valley. These health co-benefits would include reducing the burden of disease of Australia's national health priority areas, including cancer, cardiovascular health and cancer.

Replacing coal-fired power generation with low carbon electricity will result in a reduction in respiratory and cardiovascular diseases as a result of a reduction in air pollution (10). The health co-benefits of increasing use of renewable energy sources are both easily measurable and will be seen in the near-term.

AMSA recommends that as a matter incidental to the inquiry that the Board inquires into the effects on and risks to communities from the continued use of coal as an energy source.

### **Conclusion**

AMSA recommends a study into the long-term health effects of the Hazelwood fire on Morwell residents. AMSA also recommends that the Board inquires into the need for more effective air pollution monitoring and restrictions to protect the health of residents living close by to coal mines and coal-fired power plants. Finally, based on the health effects of coal-fired power generation on local residents as well as the health effects caused by climate change, AMSA recommends that the the Board inquires into the effects on and risks to communities from the continued use of coal as an energy source and suggests that the Victorian State Government rejects any further coal developments.

Thank you for taking our views into consideration and please contact us for further information or clarification.

## References

1. Physicians for Social Responsibility. Coal's Assault on Human Health Executive Summary. 2009.
2. Carey M. Coal mine fires remind us of coal's threat to our environment, climate and health 2014. Available from: <http://dea.org.au/news/article/coal-mine-fires-remind-us-of-coals-threat-to-our-environment-climate-and-he>.
3. Markandya A, Wilkinson P. Electricity generation and health. *Lancet*. 2007;370(9591):979-90. Epub 2007/09/19.
4. Doctors for the Environment Australia. Briefing paper on the health impacts of coal mining and pollution. 2011.
5. Stracher G. The rising global interest in coal fires. *Earth* [Internet]. 2010. Available from: <http://www.earthmagazine.org/article/rising-global-interest-coal-fires>.
6. Finkelman RB. Potential health impacts of burning coal beds and waste banks. *International Journal of Coal Geology*. 2004;59(1-2):19-24.
7. McInerney M. Hazelwood mine fire: health risks and public health response options 2014. Available from: <http://blogs.crikey.com.au/croakey/2014/02/27/the-hazelwood-fire-health-risks-and-public-health-response-options/>.
8. Doctors for the Environment Australia. The Health Factor: Ignored by the industry, overlooked by the government. 2013.
9. United States Environmental Protection Agency. Particulate Matter: Health. Available from: <http://www.epa.gov/pm/health.html>.
10. Costello A, Abbas M, Allen A, Ball S, Bell S, Bellamy R, et al. Managing the health effects of climate change: Lancet and University College London Institute for Global Health Commission. *Lancet*. 2009;373(9676):1693-733. Epub 2009/05/19.
11. Intergovernmental Panel on Climate Change. Working Group I contribution to the IPCC fifth assessment report Climate Change 2013: The Physical Science Basis summary for policymakers. 2013.
12. Intergovernmental Panel on Climate Change. Working Group III contribution to the IPCC fifth assessment report Climate Change 2014: Mitigation of Climate Change summary for policy makers. 2014.
13. Meinshausen M, Meinshausen N, Hare W, Raper SC, Frieler K, Knutti R, et al. Greenhouse-gas emission targets for limiting global warming to 2 degrees C. *Nature*. 2009;458(7242):1158-62. Epub 2009/05/02.

14. McMichael AJ. Globalization, climate change, and human health. *The New England journal of medicine*. 2013;368(14):1335-43. Epub 2013/04/05.
15. Intergovernmental Panel on Climate Change. Working Group II contribution to the fifth IPCC assessment report *Climate Change 2014: Impacts, Adaptation and Vulnerability*. Chapter 25: Australasia. 2014.
16. Haines A, McMichael AJ, Smith KR, Roberts I, Woodcock J, Markandya A, et al. Public health benefits of strategies to reduce greenhouse-gas emissions: overview and implications for policy makers. *Lancet*. 2009;374(9707):2104-14.