



CLIMATE^{AND}
HEALTH
ALLIANCE

Submission to Hazelwood Mine Fire Inquiry

May 2014

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About the Climate and Health Alliance

The Climate and Health Alliance (CAHA) is a not-for-profit organisation that is a national alliance of organisations and people in the health sector working together to raise awareness about the health risks of climate change and the health benefits of emissions reductions.

CAHA's members recognise that health care stakeholders have a particular responsibility to the community in advocating for public policy that will promote and protect human health.

Membership of the Climate and Health Alliance includes a broad cross section of the health sector with 26 organisational members, representing hundreds of thousands of health care professionals from a range of disciplines, health care service providers, institutions, academics, researchers, and health consumers.

For more information about the membership and governance of the Climate and Health Alliance, please see Appendix A. For further information see www.caha.org.au

Key points

- It is not clear that all efforts that could have been made to prevent the fire or to contain the fire once it was alight were taken by the mine owners or the regulators.
- It is not clear that the considerable evidence regarding the increasing likelihood of bushfire threats is being included in decision-making about coal assets or in relation to the risks to communities living or working in proximity to those facilities.
- While considerable international evidence exists regarding to risks to health from coal combustion, it is not clear that this was taken into account when evaluating risks and advising the local community about responses to exposure.
- A detailed study of the entire community should be undertaken to assess the short and long term effects on residents' health from exposure to the coal mine fire and to the ongoing exposure to pollution from the mine and coal fired power station.

Introduction

The Climate and Health Alliance, as its name suggests, is concerned with the health threats from climate change, and the organisation works to raise awareness of those risks and advocate for effective societal responses, including public policies, to reduce risks to health.

Part of this work involves examining and seeking to mitigate the drivers of climate change, which in large part (in terms of Australia's contribution) arise from the burning of fossil fuels for energy and transport.

The focus of work is concerned with the health implications of these drivers, both from the perspective of health concerns from climate change, but also in relation to the direct and immediate health impacts associated with burning fossil fuels (from coal in particular).

To this end, the Climate and Health Alliance has produced a number of submissions in relation to national energy policy and other matters relating to climate change, and its impacts on health. CAHA produced the report 'Our Uncashed Dividend' with The Climate Institute on the health benefits of reducing greenhouse gas emissions; conducted a national Roundtable on the Health Implications of Energy Policy; prepared a Briefing Paper on the same topic; produced a film on the risks to health and climate from coal and gas, The Human Cost of Power; conducted a national Forum on Climate and Health: Research, Policy and Advocacy; led the development of a joint health stakeholder Position Paper on Health and Energy Choices (forthcoming); and has contributed to numerous conferences, community dialogues, and forums, both nationally and internationally on these issues.

The topic of energy and health, and therefore coal and health, is a topic on which CAHA has considerable expertise and interest.

The Climate and Health Alliance makes this submission as a group of health organisations out of concern about the circumstances surrounding the coalmine fire at Morwell and the consequent health and wellbeing impacts on the local community. We also suggest that further research be undertaken with regard to the ongoing health and wellbeing of the local community following the coal mine fire.

The Morwell Coal Mine Fire

There were extensive warnings across the Gippsland region with regard to “dangerous fire weather” for a number of days prior to 9th February 2014. Hot, dry and windy conditions were forecast; a total fire ban was in place, and people were warned to have their bushfire survival plan ready.^{1,2}

However, despite the forecast of an acute bushfire threat preceding the coal mine fire near Morwell; there does not appear to have been appropriate prevention measures in place at the Hazelwood mine.

Climate change is contributing to an increased risk of bushfires across Australia. Given the large number and vast areas covered by potentially flammable open cut coal mines, this is an issue of national significance.

There are many questions to be answered about how this fire was allowed to develop in the way it did; why it was not prevented through proper rehabilitation of the former coal mine site; why there were not adequate sprinkler systems in place to extinguish it quickly; and were there adequate government regulations in place, and were the regulations complied with?

¹ Country Fire Authority, East Gippsland Fire Update 7th Feb 2014. Available at: <http://news.cfa.vic.gov.au/news/east-gippsland-fire-update-7th-feb.html>

² ABC News, Extreme fire threat sparks warning to be prepared, 7 Feb 2014. Available at: <http://www.abc.net.au/news/2014-02-07/extreme-fire-threat-sparks-warning-to-be-prepared/5245006?§ion=news>

An article in the *Saturday Paper* suggests there were possibly a number of failures on the part of both the mine owner and successive Victorian governments. This suggests there was unsatisfactory fire prevention; that the mine owners failed to adequately rehabilitate the disused mine; and that successive governments have failed to require appropriate liability bonds should disasters occur.³

It was reported during the coal mine fire that water resources that could be used to flood the mine were not being used as that would compromise the performance of the power station.

However, the Climate and Health Alliance understands the energy demand in Victoria and in the national electricity market at that time meant Hazelwood Power Station could actually be taken out of service without affecting power supplies.

This raises questions as to whether the inconvenience and cost to the mine owners of shutting down the power station was being prioritised over the interests of the local community who were being exposed to air pollution at levels which were ten times the air quality levels identified by the EPA Air Quality Index as "very poor".

Ensuring the Health and Wellbeing of the Community

During the period of the fire at the Hazelwood mine near Morwell from 9th February 2014 to 27th February 2014, the advice from the Victorian Department of Health was that there were minimal risks to health from the fire and no long term health risks.

This was at odds with the views of public health experts and the evidence from the scientific health and medical literature^{4,5} that burning coal poses serious adverse health risks for people in proximity to power stations and even for communities quite distant from the source.

The levels of air pollution in and around Morwell at the time of the coal mine fire were extraordinarily high: e.g. Air Quality Index levels as high as 1629 on the 25th of February (when over 150 is considered very poor) and continually above 150 for days.

One of CAHA's expert advisory committee members, Professor Colin Butler, said he had "no doubt" levels of this scale would cause ill-health and worsen ill-health in the areas affected.

CAHA has received reports of ill effects from exposure to the smoke from the fires. One such report from February 26th, states:

³ McKenzie-Murray, M. 2014, Why Morwell is burning, *The Saturday Paper*, 8 March. Available <http://www.thesaturdaypaper.com.au/2014/03/08/why-morwell-burning/1394197200#.U2IyAIGSy7x>

⁴ Physicians for Social Responsibility, 2009, Coal's Assault on Human Health.

⁵ Smith, K. et al. 2013. Energy and Human Health, *Annual Review of Public Health*, Vol. 34: 159-188.

“Even as far away as Sale, the air was full of smoke. We drove back through next to the burning coal late last night, and today my eyes are irritated and burning.”⁶

As those involved in the Inquiry would be well aware, there are significant risks to health for people who are exposed to particulate matter as a component of air pollution and in particular, fine particles (PM_{2.5}).

The America Heart Association published a Scientific Statement on Particulate Matter Air Pollution and Cardiovascular Disease in 2010, which stated:⁷

“Exposure to PM <2.5 µm in diameter (PM_{2.5}) over a few hours to weeks can trigger cardiovascular disease–related mortality and nonfatal events; longer-term exposure (e.g. a few years) increases the risk for cardiovascular mortality to an even greater extent than exposures over a few days and reduces life expectancy within more highly exposed segments of the population by several months to a few years.”

On the 27th February, 24 readings from air quality monitoring in the Latrobe Valley indicated average levels of PM_{2.5} as 279.7ug/m³. The WHO standard is 25ug/m³.

These same levels of exposure in the US would be considered 'hazardous' by the USEPA and would trigger “health warnings of emergency conditions” as the entire population is likely to be affected.⁸

This calls into the question advice from Victorian Department of Health to the local community that "we don't expect that there will be any long-term health effects, based on what we're seeing from the EPA at the moment."⁹

While this refers to long term health effects, and the exposure of the community to this level was acute and shorter term, this advice may have served to downplay the more immediate health risks, which were sufficiently serious to prompt evacuation advice from independent experts on 27th February.¹⁰

⁶ Kia, A. Personal communication.

⁷ America Heart Association, 2010, AHA Scientific Statement on Particulate Matter Air Pollution and Cardiovascular Disease: An Update to the Scientific Statement From the American Heart Association. Available here:

<http://circ.ahajournals.org/content/121/21/2331.abstract>

⁸ http://airnow.gov/index.cfm?action=resources.aqi_conc_calc

⁹ <http://www.theage.com.au/victoria/health-expert-says-no-longterm-risk-to-morwell-residents-from-smoke-haze-20140224-33d4d.html>

¹⁰ McInerney, M. 2014, Hazelwood mine fire: health risks and public health response options, Croakey, 27 February. Available at:

http://blogs.crikey.com.au/croakey/2014/02/27/the-hazelwood-fire-health-risks-and-public-health-response-options/?wpmp_switcher=mobile

Referring to long term risks in the short term situation may have contributed to residents' confusion about overall risk levels. The Inquiry may make recommendations about how such risk might be more accurately communicated.

Further research

The risk of exposure to air pollution for people in the Latrobe Valley is both long and short term.

The mine fire incident was an episode of acute exposure to severely polluted and toxic air; some of the evidence with regard to the seriousness of that exposure now exists. However there is long term and chronic exposure to air pollution from the mine and the coal fired power station, including potentially harmful pollutants such as sulphur dioxide, nitrogen dioxide, mercury, polyaromatic hydrocarbons, and volatile organic compounds.

For example, the National Pollutant Inventory shows the Hazelwood Power Station emits 12,000 tonnes of sulphur dioxide each year; 25,000 tonnes of oxides of nitrogen; 6,900 tonnes of carbon monoxide and 3,100 tonnes of PM10.¹¹

Further research which looks at both long term exposure of the Morwell community to the adjacent coal fired power generation and short term health impacts from the coal mine fire should be undertaken.

The local, immediate and global, long term implications of burning coal

A 2013 study from the University of Illinois in Chicago outlines the health risks associated with coal combustion, and notes that the combustion of coal has been "well studied, with compelling evidence of widespread health effects on the population".¹²

It says air pollution from coal combustion can affect the respiratory and cardiovascular systems (which are short term effects) as well as cause abnormal neurological development in children, poor growth of the fetus before birth, and cause cancers (which are linked to longer term exposure).

It also says: "Emissions can also be transported long distances, even globally, causing health effects to those living far from power plants."

This makes the air pollution from the coal mines and coal fired power plants in the Latrobe Valley not just an issue for the local community, but an issue for the regional and Victorian community. This health burden from this pollution, and the climate impact it creates, makes it an issue of national and global significance.

¹¹ National Pollutant Inventory, 2011-12, Electricity Supply Emissions. Available at: <http://www.npi.gov.au/npidata/action/load/emission-by-individual-facility-result/criteria/state/VIC/year/2012/jurisdiction-facility/00004337>

¹² Burt, E. et al 2013. Scientific evidence of the health effects from coal use in energy generation. Healthcare Research Collaborative, University of Illinois in Chicago and Health Care Without Harm Available at: <http://noharm-global.org/articles/news/global/coal-combustion-poses-serious-risks-human-health-review-finds>

Recommendation

The Climate and Health Alliance considers a detailed study of the entire community should be undertaken to assess the short and long term effects on residents' health from exposure to the coal mine fire and to the ongoing exposure to pollution from the mine and coal fired power station.

A long term epidemiological study is required. Any health study should also investigate the toxicology of pollutants from the coal. Any health investigation must also investigate how the recent acute exposure to harmful substances from the fire relates to the ongoing exposure of the community to pollution from the coal mine and coal-fired power station.

APPENDIX A

Climate and Health Alliance Committee of Management

Dr Liz Hanna, CAHA President (Australian College of Nursing)
Ms Fiona Armstrong, CAHA Convenor
Assoc Prof Erica Bell
Dr Brad Farrant (Australian Research Alliance for Children and Youth)
Dr Bret Hart (Alliance for Future Health)
Dr Peter Sainsbury (Public Health Association)
Dr Elizabeth Haworth (Friends of CAHA)
Alice McGushin (Australian Medical Students Association)

CAHA Organisational Members

Australian Association of Social Workers (AASW)
Australian College of Nursing (ACN)
Australian Council of Social Service (ACOSS)
Australian Hospitals and Healthcare Association (AHHA)
Australian Health Promotion Association (AHPA)
Australian Medical Students Association of Australia (AMSA)
Australian Physiotherapy Association (APA)
Australian Institute of Health Innovation (AIHI)
Australian Women's Health Network (AWHN)
Australian Nursing and Midwifery Federation (ANMF)
Australian Psychological Society (APS)
Australian Research Council for Children and Youth (ARACY)
Australian Rural Health Education Network (ARHEN)
CRANA*plus*
Doctors Reform Society (DRS)
Friends of CAHA
Health Consumers' Network (Qld)
Health Issues Centre (HIC)
Kooverup Regional Health Service
Psychology for a Safe Climate
Public Health Association of Australia (PHAA)
North Yarra Community Health (NYCH)
Services for Australian Rural and Remote Allied Health (SARRAH)
Women's Health East
Women's Health in the North
World Vision Australia

Expert Advisory Committee

Dr Erica Bell, University Department of Rural Health, University of Tasmania
Associate Professor Grant Blashki, Nossal Institute for Global Health
Professor Colin Butler, ARC Future Fellow, Professor of Public Health, University of Canberra
Professor Garry Egger, School of Health & Human Sciences, Southern Cross University
Professor David Karoly, Federation Fellow in the School of Earth Sciences, University of Melbourne
Professor Stephan Lewandowsky, School of Psychology, University of Western Australia
Dr Peter Tait, Convenor, Ecology and Environment Special Interest Group, Public Health Association
Professor Simon Chapman, Professor of Public Health, University of Sydney
Dr Susie Burke, Senior Psychologist, Public Interest, Environment & Disaster Response, Australian Psychological Society