



NZ Climate & Health Council

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28 March 2013

**Submission to Waikato District Council on the Resource Consent application from Glencol Energy Limited to develop and operate a 28ha opencast coal mine with a 48ha overburden disposal area on a Rural Zoned property at 534 and 538 Mangatawhiri Rd, Mangatawhiri.**

OraTaiao: The New Zealand Climate and Health Council **oppose the entire application.**

Our opposition to the application is on the basis of:

1. Direct effects of coal on health and wellbeing of miners, mining communities, and communities in proximity to sites of coal combustion.
2. Indirect effects of coal on health and wellbeing via climate change.

OraTaiao: The New Zealand Climate and Health Council, together with other international health bodies, recognise the adverse health impacts of the coal industry. Close to home, a recent roundtable discussion held in Australia (February 2013) involving five national health authorities highlighted the adverse health impacts associated with mineral energy - particularly coal.

[http://www.phaa.net.au/documents/130213Media%20Release\\_Health%20and%20Energy%20Roundtable%20Statement\\_Final\\_130213.pdf](http://www.phaa.net.au/documents/130213Media%20Release_Health%20and%20Energy%20Roundtable%20Statement_Final_130213.pdf)

## **1. Direct effects of coal on health and wellbeing**

Coal pollutants affect all major body organ systems and contribute to leading causes of mortality and morbidity in New Zealand, including heart disease, cancer, stroke, and chronic lower respiratory diseases. Each step of the coal lifecycle (extraction, transportation, and combustion) impacts upon human health.

### *Health risks with coal extraction*

- Coal miners (both open cast and underground) face substantial occupation risks including:
  - Physical injury.
  - Lung disease from long term exposure to coal dust.
- Local mining communities can also suffer from exposure to excess particulate matter, coal dust, and diesel particulate from diesel powered equipment. Evidence from the United

States indicates that coal mining communities in West Virginia had an increased risk for developing cardiopulmonary disease, chronic obstructive pulmonary disease (COPD), hypertension, other lung diseases and kidney disease. Mortality rates for these diseases were higher in coal mining areas compared with non-mining areas of the region.

- Rainwater on exposed rock can release heavy metals and other toxic elements that are known to be harmful to human health. These pollutants can enter surrounding water systems and can contaminate drinking water.
- Mining communities in New Zealand are amongst some of the most socio-economically deprived in the country. Depression, anxiety and ill-health are common issues in mining communities. Studies have demonstrated that residents of coal mining communities report significantly fewer healthy days both mentally and physically, and rated their overall health to be poorer than residents of non-mining communities.

#### *Health risk with coal transportation*

- Increased traffic as a result of transporting coal increases the risk of road traffic accidents. Data on coal-related road trauma for NZ are unavailable, however, in Kentucky (US) between 2000 and 2004, 53 people were killed and 536 injured as a result of accidents with vehicles licensed to transport coal.
- In the process of transporting coal vehicles release coal dust, particulate matter, and diesel particulate which can affect local communities.

#### *Health risk with coal combustion*

- There is a large body of evidence on the harmful effects of particulate matter and other pollutants produced as a result of coal combustion (e.g. nitrous oxide, ozone) on human health – particularly upon the respiratory, cardiovascular, and nervous systems.
- Other toxic elements are released with coal combustion including arsenic, mercury, fluorine, cadmium, lead, selenium and zinc. Over a third of all mercury emissions attributable to human activity come from coal-fired power stations. It enters the environment and can accumulate in the food chain, particularly in fish.

## **2. Indirect effects of coal on health and wellbeing via climate change.**

The burning of coal produces carbon dioxide, the major greenhouse gas responsible for climate change. Climate change is widely recognised by world health authorities and leading medical journals as the biggest global health threat of the 21st century well-accepted by New Zealand medical professional bodies.

Globally, climate change is already contributing to the deaths of nearly 400,000 people a year through extreme weather events, water and food insecurity, and infectious disease, mostly in developing countries. In New Zealand, climate trends may already be affecting the health of New Zealanders, and future impacts are likely to be multifaceted (see table 1).

Table 1: Potential Health Impacts of Climate Change in New Zealand

<p>Physical Injury.</p> <ul style="list-style-type: none"> <li>• Death and injury from extreme weather events (e.g. flooding).</li> </ul>
<p>Heat Waves and Heat Stress</p> <ul style="list-style-type: none"> <li>• Morbidity and mortality from hyperthermia, dehydration, chronic medical conditions, particularly in the elderly, although winter-related deaths may decline.</li> <li>• Occupational health concerns for outdoor workers.</li> </ul>
<p>Vector-borne Disease</p> <ul style="list-style-type: none"> <li>• Parts of the North Island are likely to become environmentally suitable for breeding of mosquitos that can transmit infections such as dengue fever and ross river virus.</li> </ul>
<p>Infectious Diseases</p> <ul style="list-style-type: none"> <li>• Increased frequency of foodborne and waterborne diseases. Heavy rain and warmer temperatures impact on drinking water and food hygiene, and in some cases pathogens (e.g. Salmonella) grow more readily in warmer temperatures.</li> </ul>
<p>Skin Cancer</p> <ul style="list-style-type: none"> <li>• Rates of skin cancer are expected to rise with warmer temperatures promoting increased outdoor time and UV exposure.</li> </ul>
<p>Mental Health</p> <ul style="list-style-type: none"> <li>• Increased rates of depression related to loss of livelihood (e.g. farmers with drought). Post-traumatic stress disorder in victims of extreme weather events.</li> </ul>
<p>Food Security and Nutrition</p> <ul style="list-style-type: none"> <li>• New Zealand food prices rise in tandem with global prices and this will impact on food security and potentially nutrition for lower socioeconomic groups.</li> </ul>
<p>Allergic Diseases</p> <ul style="list-style-type: none"> <li>• Possible impacts on allergic conditions with changes in pollen seasons and vegetation that produce aeroallergens.</li> </ul>
<p>Migrant Health</p> <ul style="list-style-type: none"> <li>• It is likely that climate refugees will arrive in New Zealand from Pacific Island nations. This will impact on migrant primary health care services, and the health and social issues faced by New Zealand.</li> </ul>

For further information, there are two documents attached that outline the adverse health impacts of coal in more detail:

1. Lockwood A, Welker-Hood K, Rauch M, Gottlieb B. Coal's assault on human health: a report from Physicians for Social Responsibility. 2009.
2. Castleden WM, Shearman D, Crisp G, Finch P. The mining and burning of coal: effects on health and the environment. Medical Journal of Australia. 2011.

OraTaiao: The New Zealand Climate and Health Council seek the following decision from the consent authority: **Decline the application in its entirety.**

OraTaiao: The New Zealand Climate and Health Council wish to be heard in support of this submission.

## REFERENCES ON DIRECT EFFECTS OF COAL ON HEALTH:

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Lockwood A, Welker-Hood K, Rauch M, Gottlieb B. Coal's assault on human health: a report from Physicians for Social Responsibility. 2009. <http://www.psr.org/assets/pdfs/coins-assault-executive.pdf>

Armstrong S, Haworth E, Tait P, Barker H. Health and Energy Policy Briefing Paper – National Rural Health Alliance, Climate and Health Alliance, Australian Healthcare and Hospital Association, Public Health Association Australia, National Climate Change Adaption Research Facility. February 2013. [http://caha.org.au/wp-content/uploads/2012/01/Health-and-Energy-Policy-Roundtable-Briefing-Paper\\_120213\\_final.pdf](http://caha.org.au/wp-content/uploads/2012/01/Health-and-Energy-Policy-Roundtable-Briefing-Paper_120213_final.pdf)

Hendryx M. Mortality from heart, respiratory, and kidney disease in coal mining areas of Appalachia. *International Archives of Occupational and Environmental Health* 2009;82(2):243-249.

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Kjellstrom TE, Neller A, Simpson RW. Air pollution and its health impacts: the changing panorama. *Med J Aust* 2002; 177: 604-608.

Epstein PR, Buonocore JJ, Eckerle K, et al. Full cost accounting for the life cycle of coal. *Ann NY Acad Sci* 2011; 1219: 73-98. [http://solar.gwu.edu/index\\_files/Resources\\_files/epstein\\_full%20cost%20of%20coal.pdf](http://solar.gwu.edu/index_files/Resources_files/epstein_full%20cost%20of%20coal.pdf)

## REFERENCES ON INDIRECT EFFECTS OF COAL ON HEALTH VIA CLIMATE CHANGE:

World Health Organisation and World Meteorological Association. Atlas of Health and Climate Change, 2012. <http://www.who.int/globalchange/publications/atlas/en/index.html>

World Medical Association. WMA Declaration of Delhi on Health and Climate Change. Adopted by the 60th WMA General Assembly, New Delhi, India, October 2009. <http://www.wma.net/en/30publications/10policies/c5/index.html>

Joint statement: It's time to act on climate change. Faculty of Public Health, Royal College of Physicians and 17 other organisations London: Faculty of Public Health, 2008. [http://www.fph.org.uk/uploads/sustainable\\_development\\_joint\\_statement.pdf](http://www.fph.org.uk/uploads/sustainable_development_joint_statement.pdf)

Joint letter 2009 from The Royal College of Physicians and 17 other professional bodies, published simultaneously in The Lancet and the BMJ. Politicians must heed health effects of climate change. *Lancet*. 2009;374:973; *BMJ*. 2009;339:b3672.

New Zealand Medical Association. NZMA Position Statement on Health and Climate Change. Wellington: NZMA, 2010. <http://www.nzma.org.nz/policies/advocacy/position-statements/climatechange>

New Zealand College of Public Health Medicine. Climate change: New Zealand College of Public Health Medicine policy statement. Wellington: New Zealand College of Public Health Medicine (NZCPHM), 2012.

Metcalfe S, Woodward A, Macmillan A, Baker M, Howden-Chapman P, et al; New Zealand Climate and Health. Why New Zealand must rapidly halve its greenhouse gas emissions. *N Z Med J*. 2009;122:72-95.

Climate Vulnerability Monitor 2<sup>nd</sup> Edition: A Guide to the Cold Calculus of A Hot Planet. DARA International and the Climate Vulnerable Forum, 2012. <https://s3.amazonaws.com/daraint/CVM2ndEd-ExecutiveSummary.pdf>

Howden-Chapman P, Chapman R, Hales S, Britton E, Wilson N. 2010. Climate change and human health: Impact and adaptation issues for New Zealand. In: Climate change adaptation in New Zealand: Future scenarios and some sectoral perspectives. Nottage, R.A.C, Wratt, D.S, Bornman, J.F, Jones, K. (eds). New Zealand Climate Change Centre, Wellington, pp 112-121.  
[http://www.nzclimatechangecentre.org/sites/nzclimatechangecentre.org/files/images/research/Climate%20Change%20Adaptation%20in%20New%20Zealand%20\(NZCCC\)%20high%208.pdf](http://www.nzclimatechangecentre.org/sites/nzclimatechangecentre.org/files/images/research/Climate%20Change%20Adaptation%20in%20New%20Zealand%20(NZCCC)%20high%208.pdf).

Woodward A, Hales S, De Wet N. Climate Change Potential Effects on Human Health in New Zealand. Report prepared for the Ministry for the Environment, Wellington, 2001.  
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