



CLIMATE AND  
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# Summary for policymakers

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**Coal and health in the Hunter:**  
Lessons from one valley for the world



Once an unquestioned source of economic prosperity, the damage caused by coal to people's health, natural capital and the global climate has led to closer scrutiny of its impacts. The evidence suggests coal is becoming an unwelcome social and economic burden, and a risk to community wellbeing, the economy and a safe climate.

## Introduction

The Hunter Valley is one of the largest river valleys in the Australian state of New South Wales and stretches from the coastal towns of Newcastle and Lake Macquarie in the southeast to the rugged ranges of the Barrington Tops in the north.

Traditionally regarded as a bucolic rural landscape of rolling green hills and fertile farmland, little in the Valley now remains untouched by coal mining.

The impacts on local communities in the Hunter Valley include exposure to harmful air, noise and water pollution, distress associated with social disruption, and a sense of abandonment as governments prioritise the interests of the coal industry above that of the community. Current government regulations are failing to protect the community and the Hunter Valley's natural assets from the negative impacts of the region's intensive coal mining and coal combustion industries.

This report outlines the evidence regarding harms to health from coal production, and uses published estimates of the economic costs associated with the local health impacts as well as wider global impacts (the social costs of carbon) to evaluate the economic costs associated with Hunter Valley coal.

## Community concerns

There are widespread community concerns that the expansion of underground and open-cut mining in the Hunter Valley is occurring at the expense of community wellbeing and natural ecosystems, including the clean air and soil that support the other important regional industries of viticulture and winemaking, thoroughbred horse breeding, farming and agriculture, and tourism.

International health and medical literature points to serious harm to human health from all stages of the coal lifecycle – including mine development, mining activities, and coal transportation and combustion (collectively called 'coal production' in this report).

## Risks to health

The risks to health from coal mining, transportation and combustion can be both physical and psychological, and arise from direct causes such as air pollution and water contamination, and less directly from economic burdens, loss of community, emotional distress, social conflict, ecological degradation, loss of biodiversity and climate change.

The coal mined and burned in power stations in the Hunter Valley and exported to other countries poses risks not only for the health and wellbeing of local communities, but also for communities where the exported coal is burned and, because of coal's significant contribution to climate change, for communities around the world.

## Global impacts

The production of coal is one of the most greenhouse gas intensive activities in the world, and is one of the main drivers of climate change.

Climate change poses the most serious risk to global public health this century and averting further global warming is an international public health priority.<sup>1</sup> Climate change is already a leading global cause of death, and is responsible for 400,000 deaths globally each year.<sup>2</sup> The annual toll of the global intensive carbon economy is estimated at 4.5 million deaths, mainly from air pollution, hazardous occupations and cancer.<sup>3</sup> The harm to health, industry and infrastructure from climate change costs the global economy more than one trillion dollars annually.<sup>4</sup>

1. Costello A, et al. Managing the health effects of climate change, *The Lancet*, Vol 373, 16 May 2009.

2. DARA, 2012, *Climate Vulnerability Monitor, A guide to the cold calculus for a hot planet*, 2012, available at <http://daraint.org/climate-vulnerability-monitor/climate-vulnerability-monitor-2012/>.

3. Ibid.

4. Ibid.

## Economic costs of harm from coal

Coal production also poses serious risks to the health of local communities, as well as causing substantial environmental damage – both of which incur substantial economic costs.

The impacts on local communities in the Hunter Valley include exposure to harmful air, noise and water pollution, distress associated with social disruption, and a sense of abandonment as governments prioritise the interests of the coal industry above that of the community. Government regulations are failing to protect the community and the Hunter Valley's natural assets from the negative impacts of the region's intensive coal mining and coal combustion industries.

Air quality monitoring in the Hunter Valley demonstrates the residents of the rural village of Camberwell are being exposed to higher levels of air pollution than some inner Sydney suburbs. As a major coal export hub, parts of the city of Newcastle are already experiencing intolerable levels of coal dust, and a proposed fourth coal export terminal threatens

to increase by 50 per cent the number of coal trains (to approximately 42,000 each year) passing through the city.

Estimated costs of health damages associated with coal combustion for electricity in Australia amount to \$2.6 billion per annum.<sup>5</sup> This report estimates the annual costs of associated health damages arising from the five coal fired power stations in the Hunter Valley at around \$600 million per annum.

For the towns of Singleton and Muswellbrook, the burden of health damages is estimated at \$47 million in Singleton and \$18.3 million in Muswellbrook each year from exposure to fine particles (PM2.5) emitted from coal mines and coal fired power stations into the air. These particles travel deep into the lungs and pass into the blood stream, posing a risk of stroke and heart attacks.

This report uses published estimates of the economic costs associated with the local health impacts as well as wider global impacts (the social costs of carbon) associated with Hunter Valley coal, outlined in the tables below.

**Table 1. The local health costs of coal in the Hunter Valley**

Source of health damage	Value of health costs
Externalised health costs associated with pollution from five coal fired electricity generators in the Hunter Valley	\$600 million per annum
Health costs among people living in Singleton associated with fine particle pollution (PM2.5) from coal sources (coal mines and coal fired power stations) in Singleton	\$47 million per annum
Health costs among people living in Muswellbrook associated with fine particle pollution (PM2.5) from coal sources (coal mines and coal fired power stations) in Muswellbrook	\$18.3 million per annum
Health costs among people living in Newcastle associated with air pollution (PM10) from coal sources in Newcastle	\$13 million per annum

**Table 2. Social costs of carbon associated with Hunter Valley coal**

Estimates of the social costs of carbon (SCC)	Current production volume of Hunter Valley coal	Social cost of carbon associated with Hunter Valley coal
\$37-190/tonne CO <sub>2</sub> e	145 million tonnes per annum	\$16-66 billion per annum

5. Beigler T, 2009, The Hidden Costs of Electricity: Externalities of power generation in Australia, Report for Australian Academy of Technological Sciences and Engineering (ATSE), Parkville, Victoria, available at <http://www.atse.org.au/Documents/Publications/Reports/Energy/ATSE%20Hidden%20Costs%20Electricity%202009.pdf>

## Failure of regulation

Despite these serious and costly impacts, recent changes to planning laws remove the rights of communities to contest proposed projects. The views of health experts and community members have little impact on policy and approvals, and projects are failing to account for greenhouse emissions, human health and broader environmental impacts.

Insights into the impacts on individuals and communities are provided in the report's case studies and accompanying videos, illustrating the adverse impacts of air pollution, noise, disempowerment. These demonstrate a failure to adequately research or regulate is leading to adverse impacts on individuals and the broader community in the Hunter Valley.

## Recommendations

The recommendations accompanying this report call for:

- A ban on new coal projects in the Hunter Valley
- The development of a transition plan to assist the region develop new industries as coal is phased out
- Stronger regulation of any projects in the planning pipeline to adequately evaluate and limit health, climate, and environmental damages
- Stricter air quality standards and monitoring of all coal sources, with data publicly available
- Increased consultation with communities affected by coal projects
- The implementation of mandatory health impact assessments as part of all project assessment processes still in the planning phase
- Comprehensive health research studies to evaluate:
  - the environmental health risks faced by local communities from exposure to pollutants associated with the coal industry, and
  - the social impacts associated with disruption to communities, to landscapes, ecosystems and other industries.

Coal has powered economic and social development for two centuries. However, we are now aware of the severe, and potentially catastrophic, damage done to individuals, communities, the economy and the environment by the mining, processing and burning of coal. Governments must act now to (1) tackle the problems caused by coal in the Hunter Valley and (2) move society away from dependence on coal and other fossil fuels to environmentally sustainable, healthy, renewable energy sources.