

United Wambo Open Cut Coal Mine Project

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GP

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Doctors For The Environment Australia



Doctors for the
Environment
Australia

 **Doctors for the Environment Australia**
www.dea.org.au

Doctors for the Environment, Australia (DEA) is a voluntary, doctor's organisation, formed in 2001, with members in all States and Territories. The aim of the organisation is to inform and educate the public, the medical profession and policy makers about the relationships between health and the environment. Our priority issue at the present time is the health effects of climate change. DEA is a member of the International Society of Doctors for the Environment.

□ Scientific committee:

Prof. Stephen Boyden AM
Prof. Peter Doherty AC
Prof. Bob Douglas AO
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Climate Change



THE LANCET

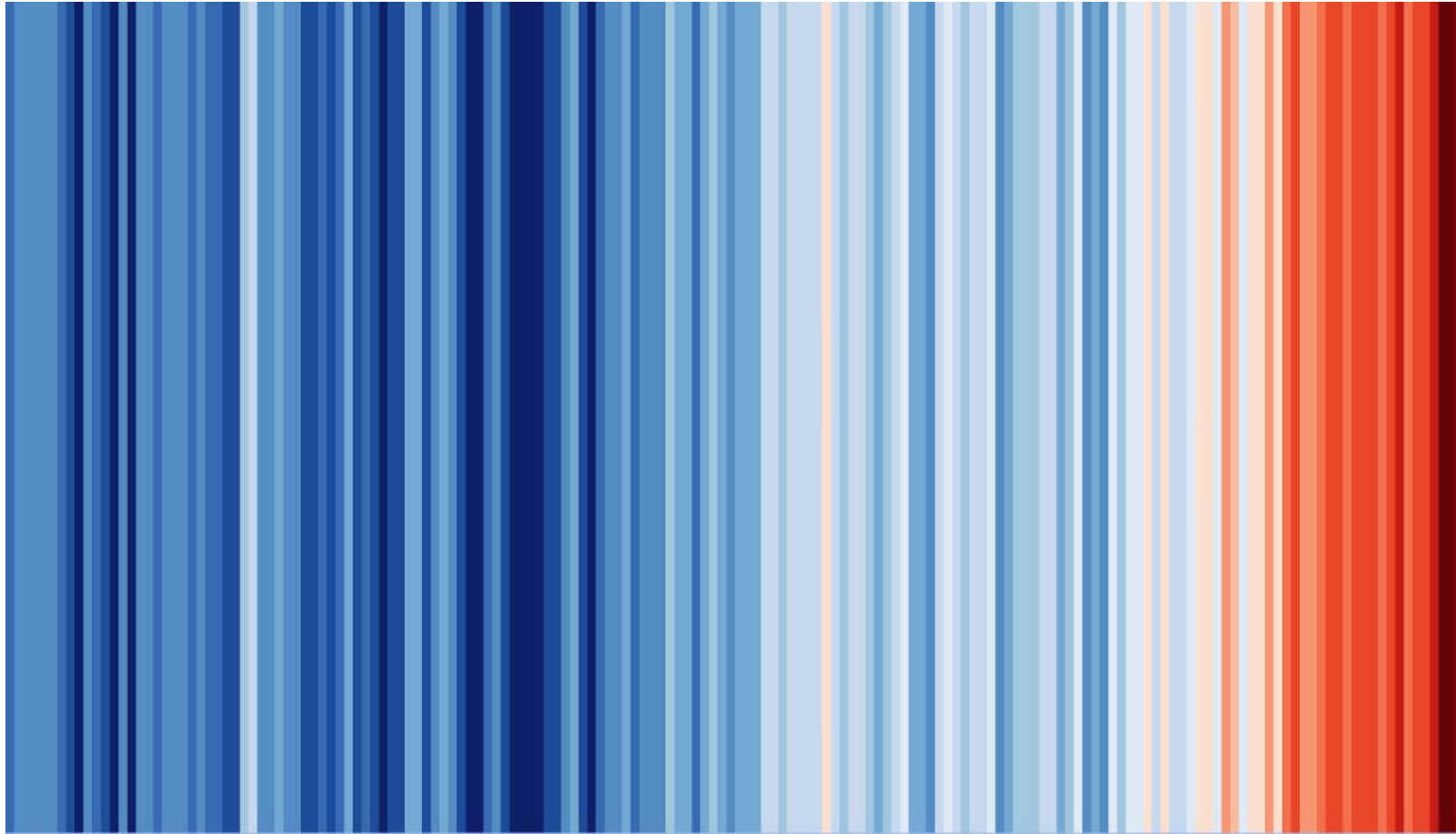
Volume 373 · Number 9676 · Pages 1659-1734 · May 16-22, 2009

www.thelancet.com

"Climate change is
the biggest global
health threat of the
21st century."

See The Lancet Commissions page 1693

Climate Change



Climate Change

Areal average temperatures									
	Maximum Temperature			Minimum Temperature			Mean Temperature		
	Rank (of 109)	Anomaly (°C)	Comment	Rank (of 109)	Anomaly (°C)	Comment	Rank (of 109)	Anomaly (°C)	Comment
Australia	76	+0.53		99	+0.93		92	+0.73	
Queensland	= 93	+1.34		103	+1.50	7th highest	106	+1.42	4th highest (record +2.58 °C in 2014)
New South Wales	65	+0.77		95	+1.49		= 79	+1.13	
Victoria	79	+0.71		92	+0.94		82	+0.83	
Tasmania	73	+0.35		102	+0.90	8th highest	87	+0.63	
South Australia	= 43	-0.55		64	+0.35		= 52	-0.09	
Western Australia	57	+0.26		77	+0.42		68	+0.34	
Northern Territory	83	+0.63		100	+1.24	10th highest	96	+0.94	

Rank ranges from 1 (lowest) to 109 (highest). A rank marked with '=' indicates the value is tied for that rank. **Anomaly** is the departure from the long-term (1961–1990) average.



Climate Change



The Burrumbuttock Hay Runners convoy of about 250 prime movers and 400 trailers complete their 1860km run hauling \$6 million worth of hay to Ilfracombe, east of Longreach, QLD. All of NSW is now officially in drought. Picture: Lyndon Mechielsen

NEWS

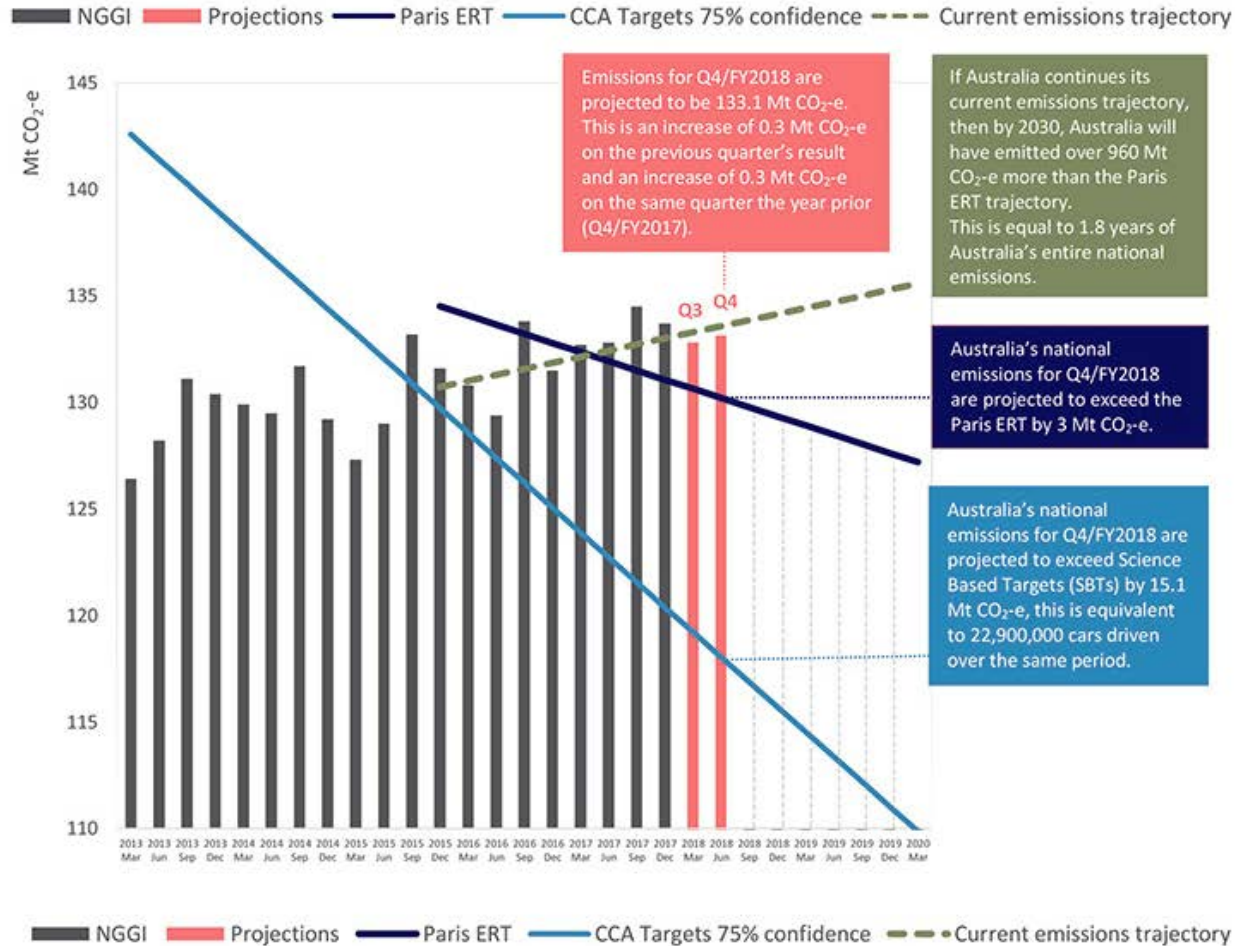
'This is tough': All of NSW now officially in drought

8th Aug 2018 10:15 AM



- Higher rates of mental illness, suicidality
- Loss of income
- Reduced access to fresh healthy food

Climate Change



Climate Change

Actions

- 16.1 Manage the risks of climate change and improve the region's resilience to flooding, sea level rise, bushfire, mine subsidence, and land contamination.
- 16.2 Review and consistently update floodplain risk and coastal zone management plans, particularly where urban growth is being investigated.
- 16.3 Incorporate new knowledge on regional climate projections and related cumulative impacts in local plans for new urban development.
- 16.4 Review and update the Newcastle Mines Grouting Fund and investigate its relevance to other areas.

Department of Planning and Environment Hunter Regional
Plan - A biodiversity rich natural environment

Climate Change

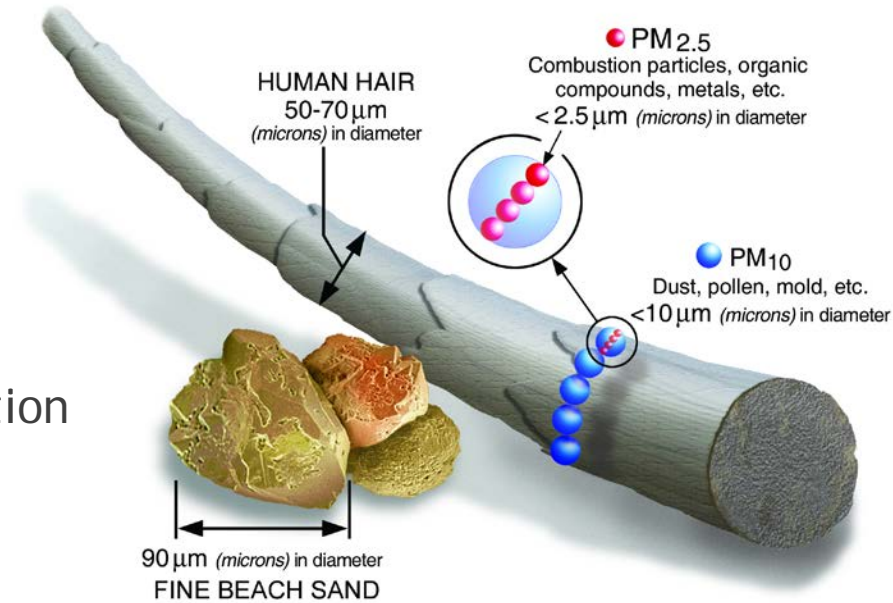
- ▶ In modelled 1.5°C pathways with limited or no overshoot, the use of CCS would allow the electricity generation share of gas to be approximately 8% (3-11% interquartile range) of global electricity in 2050, **while the use of coal shows a steep reduction in all pathways and would be reduced to close to 0%** (0-2% interquartile range) of electricity (*high confidence*).
- ▶ *“The Project proposes open cut coal mining for a **period of 23 years**”*
- ▶ *“**The Project will contribute to global emissions**, however, the extent to which global emissions and atmospheric concentrations of greenhouse gases have a demonstrable impact on climate change will be largely driven by the global response to reducing total global emissions which includes all major emission sources and sinks.”*

Climate Change

- ▶ “The majority of Scope 3 emissions will be generated by third parties who transport and consume coal products. United has no operational control over Scope 3 emissions, as these emissions are generated by the activities of other organisations” (EIS Appendix 8 page 2)
- ▶ **150 million tonnes** of coal
- ▶ Over **200 million tonnes** of CO2 produced
- ▶ Estimated 210,000 premature deaths annually due to combustion of coal
- ▶ **4200 premature deaths** over lifetime of United Wambo Project

Air Quality


- ▶ Eye, nose and throat irritation
- ▶ Shortness of breath
- ▶ Exacerbation of asthma
- ▶ High blood pressure
- ▶ Kidney disease
- ▶ Strokes
- ▶ Pulmonary oedema (fluid collection)
- ▶ Heart disease
- ▶ Low birth weight
- ▶ Type 2 diabetes



Air Quality

- ▶ “for the cumulative scenario, maximum 24- hour average PM2.5 concentrations have the potential to exceed the advisory reporting goal of 25 µg/m³ in Warkworth village”
- ▶ “The blasting procedures implemented at all Glencore NSW mines and which will be implemented for the Project include a pre-blast review of weather conditions which avoid blasting in adverse conditions”



 Mine blast at HVO in January 17 this year - another Yancoal owned mine. This blast was reported to the EPA. Photo supplied.



 CONCERNS: Blast that took place at Mount Thorley Warkworth mine on Friday April 13. Photo supplied.

Blast Plumes

- ▶ Unpredictable and dangerous
- ▶ Nitrogen dioxide and other harmful chemicals
- ▶ Blast plumes at Mt Thorley has travelled 3km
- ▶ A QLD blast plume caused illness in workers 6km away

Mine blast gone wrong spews toxic cloud

Joanne McCarthy



A toxic fume from a blast at the Mount Arthur mine in the Upper Hunter turned the sky bright orange and prompted demands for a much stronger response from environmental regulators.

Ammonium nitrate and fuel oil were detonated at the mine near Muswellbrook on Wednesday afternoon, causing poisonous fumes containing nitrogen dioxide to spread several kilometres from the site.



The sky above Mount Arthur mine in Muswellbrook glows orange after a blast that went wrong. Photo:

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Air Quality

Days above benchmark concentrations

There were 29 days over the PM₁₀ benchmark in winter 2018, with sites closer to mines recording the highest number of days. There were two days over the PM_{2.5} benchmark in winter 2018.

Table 1 Number of days above the relevant national benchmarks – winter 2018

Station type*	Station	PM ₁₀ daily [50 µg/m ³ benchmark]	PM _{2.5} daily [25 µg/m ³ benchmark]	SO ₂ hourly [20 pphm benchmark]	SO ₂ daily [8 pphm benchmark]	NO ₂ hourly [12 pphm benchmark]
Population centre	Aberdeen	0	-	-	-	-
Population centre	Muswellbrook	4	2	0	0	0
Population centre	Singleton	3	0	0	0	0
Smaller community	Bulga	1	-	-	-	-
Smaller community	Camberwell	19	0	-	-	-
Smaller community	Jerrys Plains	0	-	-	-	-
Smaller community	Maison Dieu	9	-	-	-	-
Smaller community	Warkworth	1	-	-	-	-
Smaller community	Wybong	2	-	-	-	-
Diagnostic	Mount Thorley	15	-	-	-	-
Diagnostic	Muswellbrook NW	1	-	-	-	-
Diagnostic	Singleton NW	6	-	-	-	-
Background	Merriwa	1	-	-	-	-
Background	Singleton South	3	-	-	-	-

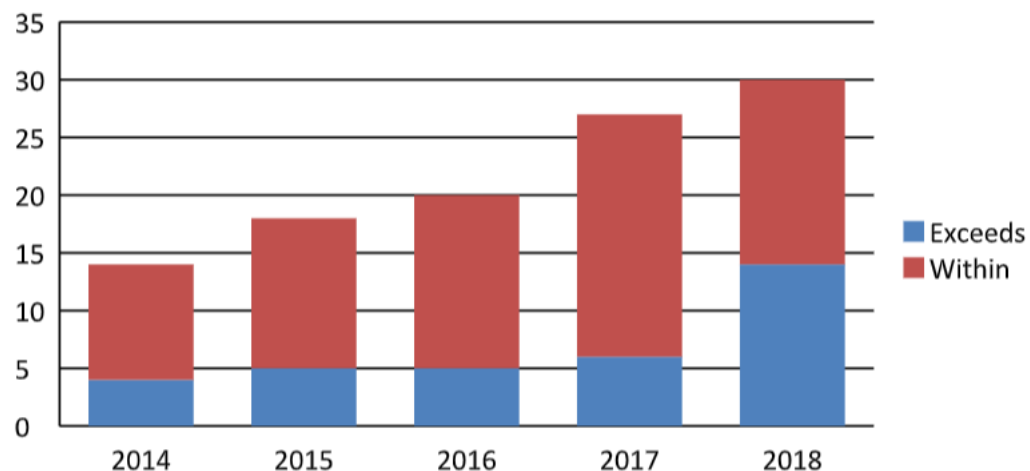
µg/m³ = microgram per cubic metre and pphm = parts per hundred million by volume (i.e. parts of pollutant per hundred million parts of air)
 - = not monitored * For explanation, refer to the end of the report Definitions: Upper Hunter monitoring station types

The WHO recommends targets of <20mcgm/m for PM10

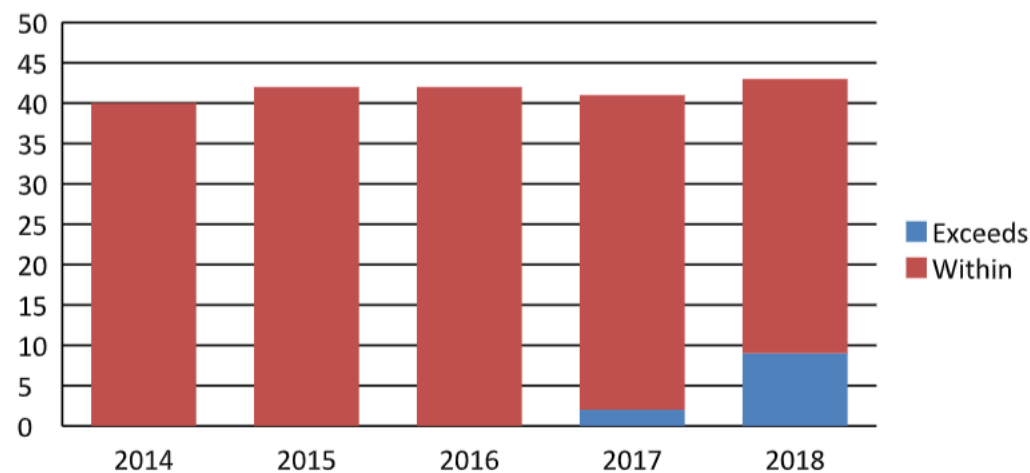
Air Quality - 2018

Location	PM 2.5	PM 10
Sydney Basin		
Liverpool	10.1	
Chullora	8.6	
Richmond	8.1	
Paramatta North	9.2	
Prospect	8.5	
Campbelltown	8.4	
Lower Hunter		
Carrington	8.2	27.3
Mayfield	8.3	26.9
Beresfield	8.7	
Upper Hunter		
Muswellbrook	9.4	27.2
Singleton	8.1	
Singleton NW		26.9
Camberwell	8.4	31.3
Maison Dieu		27.9
Mt Thorley		29.1
Warkworth		26.4
Rest of NSW		
Wagga Wagga North	8.4	27.4
Tamworth	8.3	

NSW locations within and exceeding the fine particle standard



NSW locations exceeding the coarse particle standard.



Air Quality

Risks from air pollution to human health

Effects on health in the Hunter 2007 ED respiratory presentations

Age group	location	n	Rate/100,000
0-14	Singleton	2026	13255
	Muswellbrook	1305	13368
	Rest of HNEAHS	41983	8806
	Sydney	114713	5981
65+	Singleton	306	5005
	Muswellbrook	235	5676
	Rest of HNEAHS	19869	5035
	Sydney	49868	3967

Social Impacts

J. Hresc et al.

Environmental Impact Assessment Review 72 (2018) 64–70

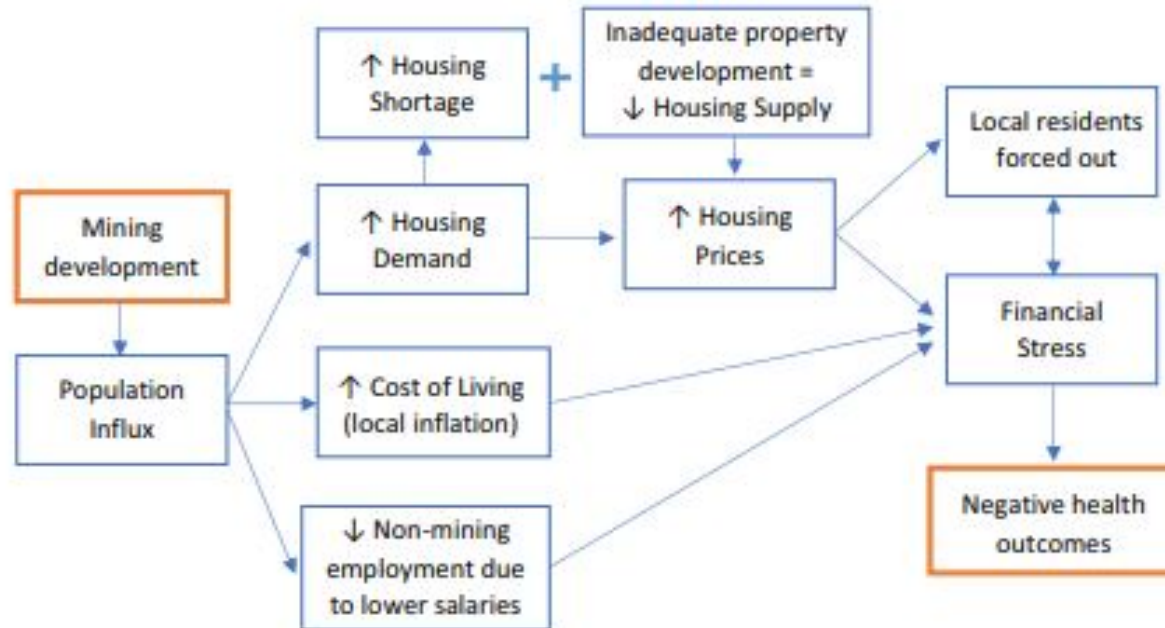


Fig. 1. Causal pathway of mining development indirectly influencing health outcomes of local community residents through indirect economic factors, based on published literature. (↑ means increase, ↓ means decrease).

Social Impacts

- ▶ 9000 workers drive into the region daily to work in coal mining industry
- ▶ DIDO workers create negative social and economic stress on the region¹
- ▶ Significant growth in casualization of the workforce
- ▶ 82% of mining industry job advertisements on Seek.com were contractor companies
- ▶ Casual workers are paid on average 30% less than permanent workers
- ▶ Women who are employed casually have little financial protection through pregnancy
- ▶ Anecdotal reports permanent staff being made redundant before entitlements are available
- ▶ Anecdotal reports of population actively leaving town due to concerns around air quality and health risks (e.g. Dr Craig Barry)

1. Housing market dynamics in resource boom towns, Haslam McKenzie et al 2009

2. Impact of Fly-In Fly out/Drive-in Drive-out work practices on local government. Report for Australian Centre of Excellence for Local Government 2012

Water Quality and Quantity

- ▶ “It is important to note that coal mining will always impact the groundwater regime....this unavoidable impact is only considered significant when there is a consequence from this impact: that is, that groundwater users or the environment are affected by changes in the quality of quantity of groundwater.” (EIS Appendix 12 Groundwater p103)
- ▶ Cumulative drawdown modelling shows a reduction in flow to the Hunter River and Wollombi Brook (EIS p103/104)

Environmental risk

▶ Biodiveristy

- ▶ Risk to threatened species Regent Honeyeater, Swift Parrot and Spotted-tailed Quoll.

▶ Rehabilitation

- ▶ Two large voids are going to be left in the landscape
- ▶ “Aspects of the current regulatory framework for mine rehabilitation do not meet best practice.” - Department of Planning and Environment website



Conclusion - Oppose

- ▶ Climate change
- ▶ Air quality
- ▶ Social impacts
- ▶ Water quality and quantity
- ▶ Environmental risk