

Rixs Creek Mod 10

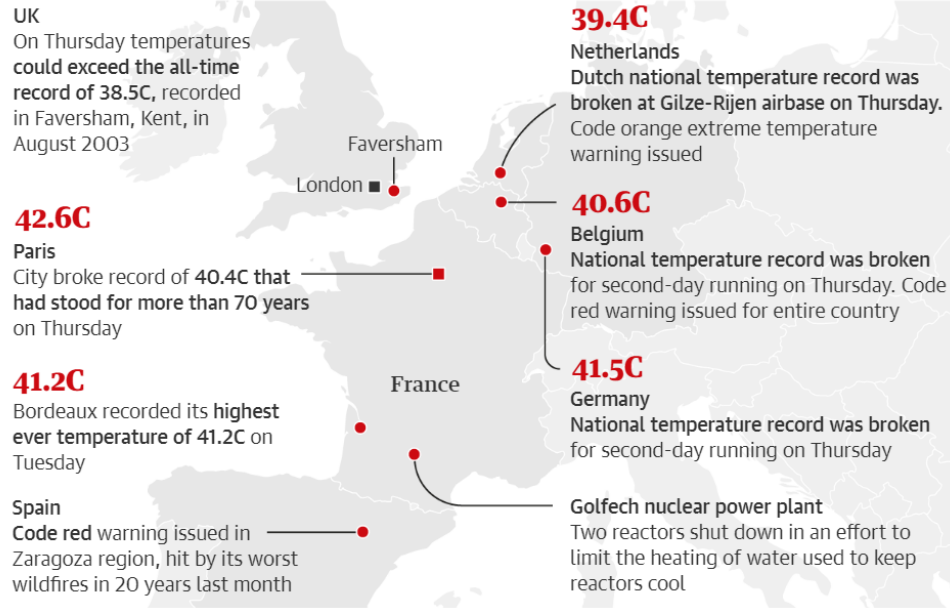
Dr Bob Vickers

GP

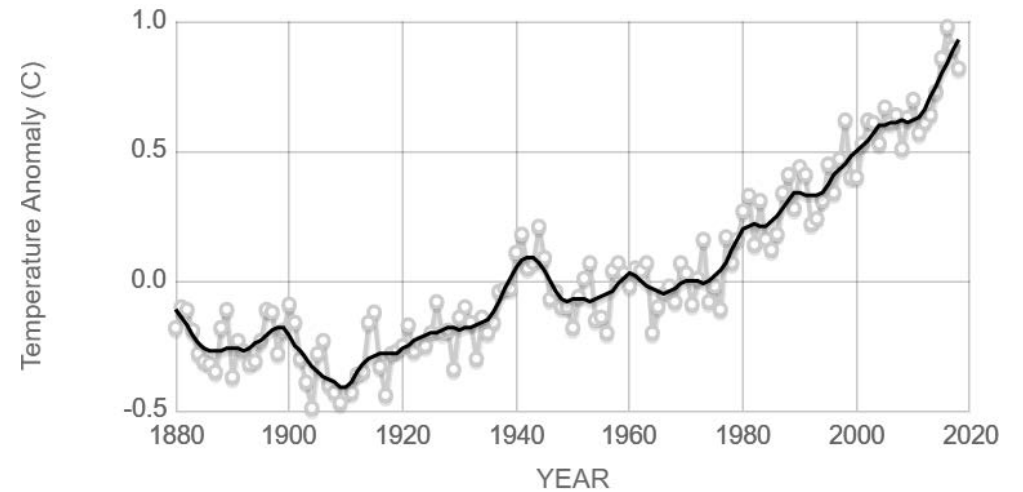
Doctors for the Environment

Directly impacted by this project

All-time temperature records have been falling across Europe



Guardian graphic



Source: climate.nasa.gov

We can not ignore what is happening

- ▶ “anthropogenic global warming is not only unparalleled in terms of absolute temperatures⁵, but also unprecedented in spatial consistency within the context of the past 2,000 years.”¹
- ▶ “It has been the second-warmest January–June on record for Australia (spanning 110 years), with rainfall also below to very much below average over most of the country”²

1. No evidence for globally coherent warm and cold periods over the preindustrial Common Era [Raphael Neukom](#), [Nathan Steiger](#), [Juan José Gómez-Navarro](#), [Jianghao Wang](#) & [Johannes P. Werner](#) *Nature* volume 571, pages 550–554 (2019)
2. <http://www.bom.gov.au/climate/current/month/aus/summary.shtml>

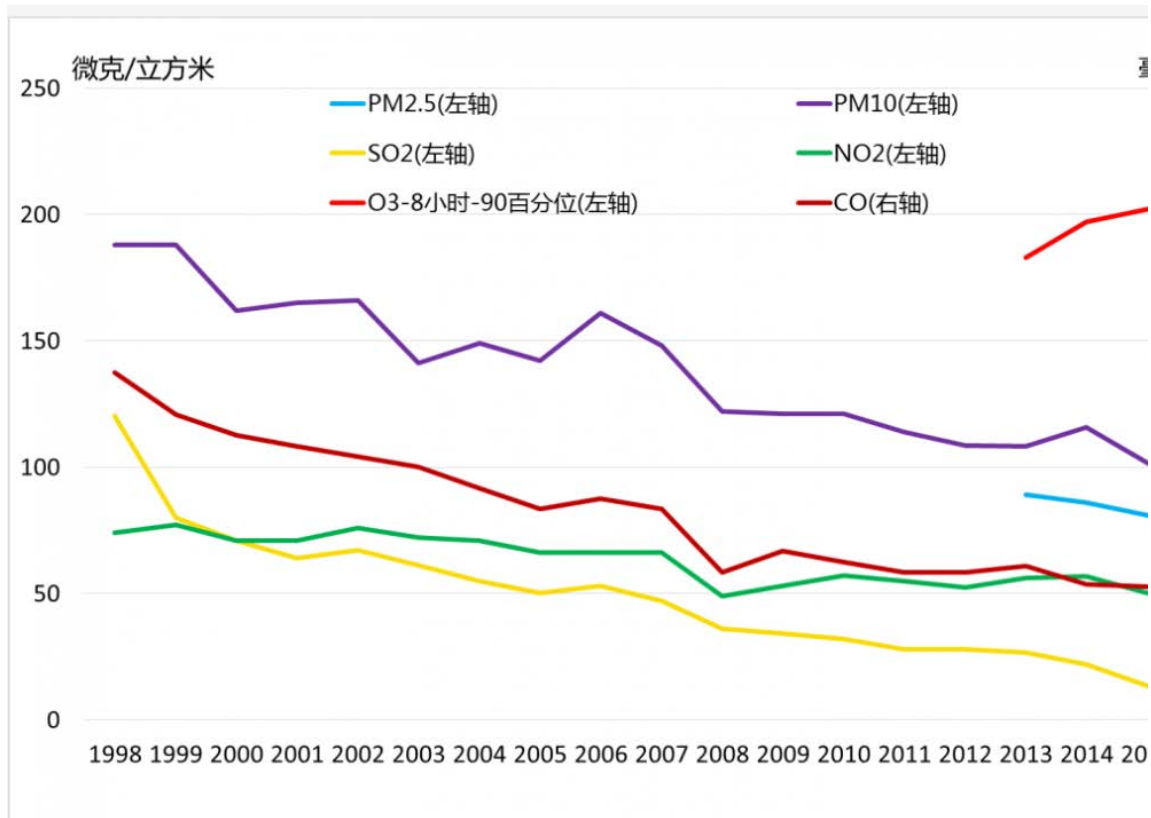
International Panel on Climate Change Recommendations

- ▶ 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*).
- ▶ “Overall Bloomfield considers that the Project is not inconsistent with the climate change policies of either the Australian or NSW Governments”

Cumulative impacts

- ▶ Bloomfield Rix's Creek Mine continuation would contribute 25 million tonnes of coal
- ▶ 72 Mt Co2-e greenhouse gas emissions
 - ▶ (scope 1, 2 and 3)
 - ▶ Six hundred thousands cars driven for a year
 - ▶ **11428 tonnes Co2-e per employee per year**
 - ▶ Australians currently contribute **18.3 tonnes per person per year** (11th highest in the world)
 - ▶ Under the conventional 2°C scenario, with a carbon budget of 1000Gt over the 50 years (see Chapter 2), the distribution of the global carbon budget proposed from 2000-2050 amounts to average yearly emission allowances of around 3tCO2-e per capita. ¹
- ▶ 1. Beyond Zero Emissions Report 2012

“even in the Hunter, it's not Beijing”



- ▶ In 1998, Beijing took notice of Air Pollution and made steps to reduce it
- ▶ Optimized energy infrastructure and implemented coal-fired pollution control measures.

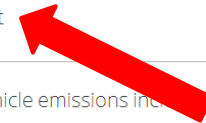
“I know that in the Hunter Valley, a significant proportion of the, um, particulate matter in the air derives from sea salt”

Table ATM6 Factors identified in PM_{2.5}, and their relative contributions and potential sources

Factor	Contribution of factor to total annual PM _{2.5} mass at Muswellbrook	Contribution of factor to total annual PM _{2.5} mass at Singleton	Potential source(s)
Wood smoke	30 ± 3%	14 ± 2%	Domestic wood heaters
Secondary ammonium sulfate	17 ± 2%	20 ± 2%	Occurs when gaseous sulfur dioxide emitted to the atmosphere during combustion of fossil fuels (e.g. power stations or motor vehicles) oxidises in the air, in the presence of sunlight, to form sulfuric acid. Ammonia that is emitted from biological production, such as livestock wastes and fertiliser, neutralises the sulfuric acid to produce ammonium sulfate particles
Pollutant-aged sea salt	13 ± 2%	18 ± 3%	Sea salt that has reacted with pollutants, especially from fossil fuel combustion (SO ₂ and NO ₂)
Biomass smoke	12 ± 2%	8 ± 2%	Bushfires, hazard reduction burns
Soil dust	11 ± 1%	12 ± 2%	Soil dust, fugitive coal dust
Vehicles/industry	8 ± 1%	17 ± 2%	Vehicles and industry. Vehicle emissions include fuel combustion emissions, and those from brake and tyre wear
Secondary nitrate	6 ± 1%	3 ± 2%	Secondary particles formed by photochemical reactions in the atmosphere with nitrate originating from NO _x emitted from fossil fuel combustion in vehicles, industry, nonroad diesel equipment, etc.
Fresh sea salt	3 ± 1%	8 ± 1%	Sea salt aerosol formed by waves breaking in the open ocean and from coastal surf breaks. The small particles can be transported hundreds of kilometres inland

50% of Singletons PM2.5 come from fossil fuels

8% comes from fresh sea salt

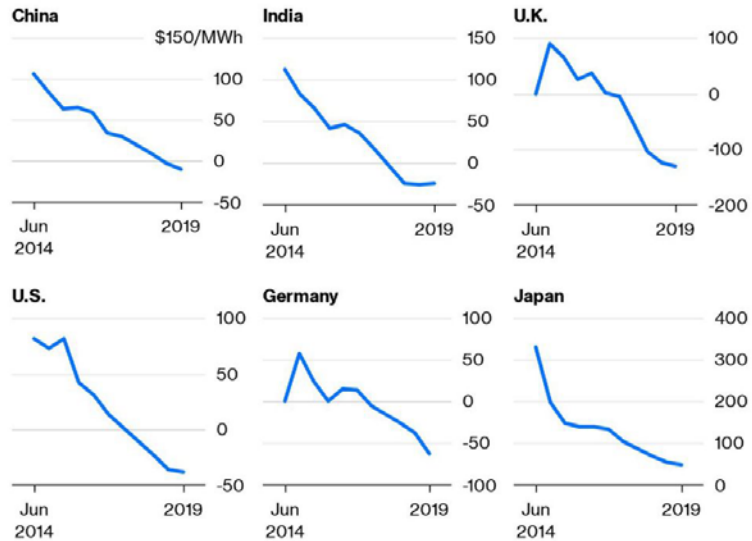


“If there was that unexpected interference in, um, ah, or - or impact on the market and - and, ah, business as usual, ah, then I’m not quite sure that, um, we have a trigger to pull at that time to bring forward, ah, those closure planning requirements. ”

Economics don't stand up

Rising Sun

The price of new solar generation is below the price of new coal in most major markets

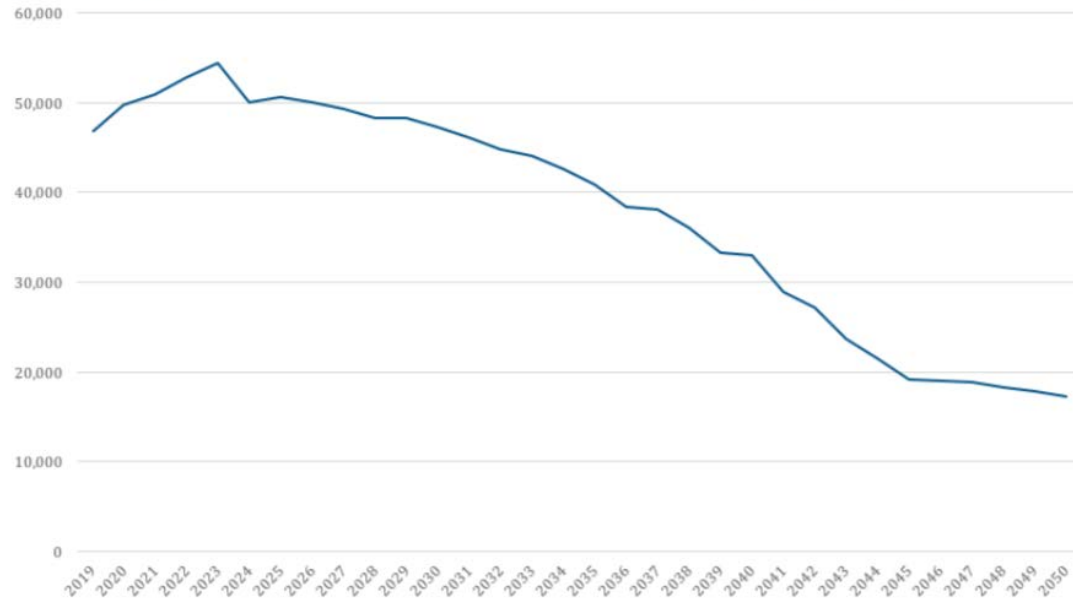


Note: Shows LCOE for no-tracking solar PV minus LCOE for coal. Median PV LCOE in the six markets listed is \$56/MWh (range: \$37-\$117). Source: BloombergNEF

BloombergOpinion

Japanese Thermal Coal Consumption Approaching Long Term Decline Australia's Biggest Export Destination to Transition Away from Coal

Figure i: Japan's Business-As-Usual Coal-Fired Power Capacity (MW)



Source: Global Energy Monitor, IEEFA calculations

- NPV \$5.7m per annum
- Royalties only 2% of NSW revenue
- Air pollution costs \$47m per annum in health costs to Singleton

- Japan's environment ministry announced in March 2019 that it would not sanction any more coal-fired power plants or upgrades to existing ones.
- Japan's major power utilities are now prioritising renewable energy (solar, offshore wind) over coal-fired power. Coal may also face increased competition from Liquefied Natural Gas (LNG) in the longer term.

Air Pollution



Health Effects

- ▶ 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





Release: NIH study links air pollution to increase in newborn intensive care admissions

Friday, July 19, 2019



Credit: Stock Image

Infants born to women exposed to high levels of air pollution in the week before delivery are more likely to be admitted to a newborn intensive care unit (NICU), suggests an analysis by researchers at the National Institutes of Health. Depending on the type of pollution, chances for NICU admission increased from about 4% to as much as 147%, compared to infants whose mothers did not encounter high levels of air pollution during the week before delivery. The study was led by Pauline Mendola, Ph.D., of the Epidemiology Branch at NIH's *Eunice Kennedy Shriver* National Institute of Child Health and Human Development. It appears in *Annals of Epidemiology*.

"Short-term exposure to most types of air pollutants may increase the risk for NICU admission," Dr. Mendola said. "If our findings are confirmed, they suggest that pregnant women may want to consider limiting their time outdoors when air quality advisories indicate unhealthy conditions."



[Environ Res.](#) 2012 Aug;117:100-11. doi: 10.1016/j.envres.2012.05.007. Epub 2012 Jun 21.

Ambient air pollution, birth weight and preterm birth: a systematic review and meta-analysis.

[Stieb DM](#)¹, [Chen L](#), [Eshoul M](#), [Judek S](#).

[+](#) **Author information**

Abstract

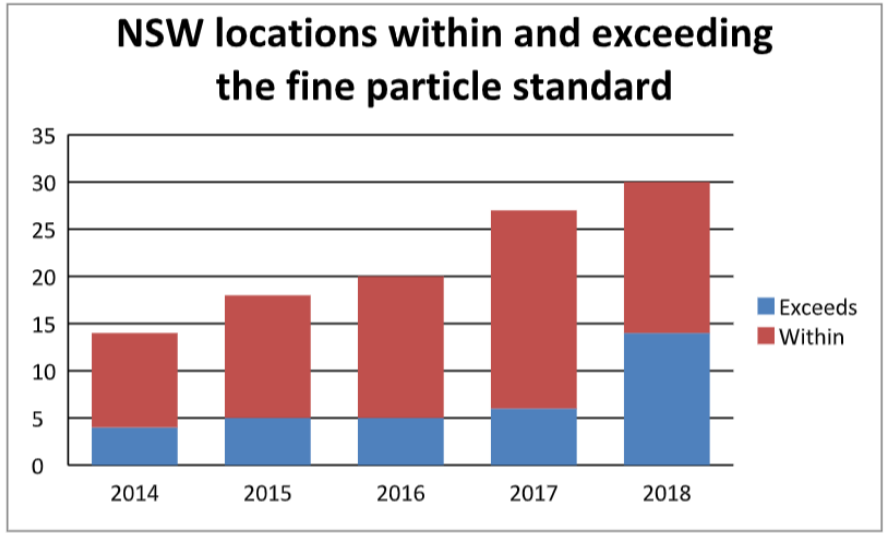
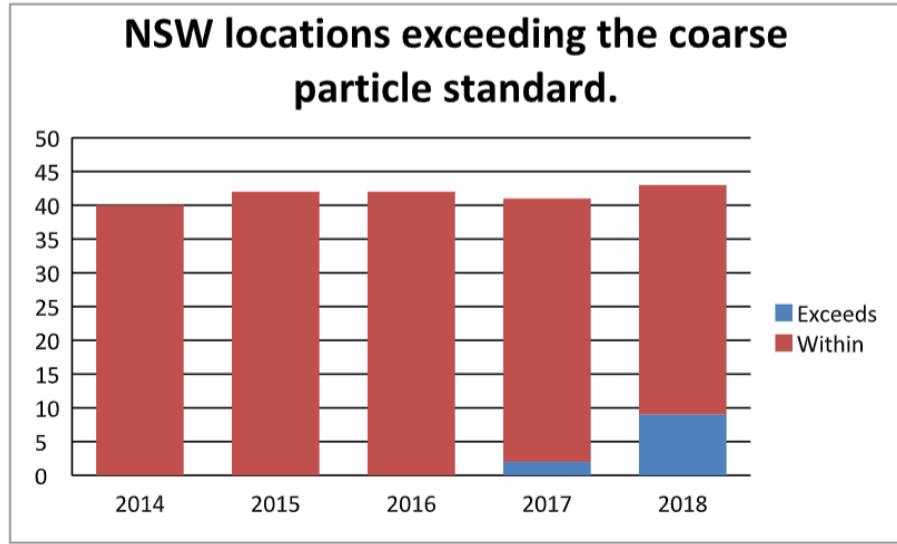
Low birth weight and preterm birth have a substantial public health impact. Studies examining their association with outdoor air pollution were identified using searches of bibliographic databases and reference lists of relevant papers. Pooled estimates of effect were calculated, heterogeneity was quantified, meta-regression was conducted and publication bias was examined. Sixty-two studies met the inclusion criteria. The majority of studies reported reduced birth weight and increased odds of low birth weight in relation to exposure to carbon monoxide (CO), nitrogen dioxide (NO₂) and particulate matter less than 10 and 2.5 microns (PM(10) and PM(2.5)). Effect estimates based





Things are getting worse

- ▶ **Camberwell has had 37 air quality alerts** this year, with air pollution breaching national standards



Bloomfield's record

- ▶ “the Department has identified an **inadequacy in the Bloomfield Group's assessment of air quality impacts** resulting from the Rix's Creek Continuation of Mining Project. The air quality impact assessments provided to date in respect of the Project have not considered a number of sensitive receivers.”
- ▶ Bloomfield Managing Director Brett Lewis said.
“With the benefit of the review and hindsight it is possible to interpret that **we may have operated beyond our consent on some occasions.**”

Mine / Exploration Licence	Assessment details	Action taken
Rix's Creek South Coal Mine	An inspection identified: <ul style="list-style-type: none">• areas of high weed density.• unexplained areas of low species diversity within pasture rehabilitation areas.• a disconnect between monitoring records for rehabilitation areas against completion criteria and rehabilitation maintenance activities.	A s 240 Notice was issued to update the current Mining Operation Plan to address the risks to satisfactory rehabilitation progress identified during the review of rehabilitation monitoring against completion criteria.
Rix's Creek North Coal Mine	An inspection identified: <ul style="list-style-type: none">• areas of high weed density.• unexplained areas of low species diversity within pasture rehabilitation areas.	A s 240 Notice was issued to update the current Mining Operation Plan to address the risks to satisfactory rehabilitation progress identified during the review of rehabilitation monitoring against completion criteria.

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



Conclusion

