



**Public Health Association**  
AUSTRALIA

## **Public Health Association of Australia submission on the Coal-Fired Power Funding Prohibition Bill 2017**

**Contact for recipient:**  
Committee Secretary  
Senate Standing Committees on Environment and Communications  
A: PO Box 6100, Parliament House, Canberra ACT 2600  
E: [ec.sen@aph.gov.au](mailto:ec.sen@aph.gov.au) T: (02) 6277 3526

**Contact for PHAA:**  
Terry Slevin – Chief Executive Officer  
A: 20 Napier Close, Deakin ACT 2600  
E: [phaa@phaa.net.au](mailto:phaa@phaa.net.au) T: (02) 6285 2373

**14 August 2019**

# Contents

<b>Preamble</b>	<b>3</b>
The Public Health Association of Australia.....	3
Vision for a healthy population .....	3
Mission for the Public Health Association of Australia .....	3
<b>Introduction</b>	<b>4</b>
<b>The Bill</b>	<b>4</b>
<b>PHAA Response to the Bill</b>	<b>4</b>
Fossil fuels in Australia.....	4
Health effects of fossil fuels .....	5
Health effects for miners	5
Health effects for communities	5
Health effects globally	6
Public subsidies of coal in Australia .....	6
Renewable alternatives.....	6
<b>Conclusion</b>	<b>7</b>
<b>References</b>	<b>8</b>

# Preamble

## The Public Health Association of Australia

The Public Health Association of Australia (PHAA) is recognised as the principal non-government organisation for public health in Australia working to promote the health and well-being of all Australians. It is the pre-eminent voice for the public's health in Australia.

The PHAA works to ensure that the public's health is improved through sustained and determined efforts of the Board, the National Office, the State and Territory Branches, the Special Interest Groups and members.

The efforts of the PHAA are enhanced by our vision for a healthy Australia and by engaging with like-minded stakeholders in order to build coalitions of interest that influence public opinion, the media, political parties and governments.

Health is a human right, a vital resource for everyday life, and key factor in sustainability. Health equity and inequity do not exist in isolation from the conditions that underpin people's health. The health status of all people is impacted by the social, cultural, political, environmental and economic determinants of health. Specific focus on these determinants is necessary to reduce the unfair and unjust effects of conditions of living that cause poor health and disease. These determinants underpin the strategic direction of the Association.

All members of the Association are committed to better health outcomes based on these principles.

## Vision for a healthy population

A healthy region, a healthy nation, healthy people: living in an equitable society underpinned by a well-functioning ecosystem and a healthy environment, improving and promoting health for all.

The reduction of social and health inequities should be an over-arching goal of national policy and recognised as a key measure of our progress as a society. All public health activities and related government policy should be directed towards reducing social and health inequity nationally and, where possible, internationally.

## Mission for the Public Health Association of Australia

As the leading national peak body for public health representation and advocacy, to drive better health outcomes through increased knowledge, better access and equity, evidence informed policy and effective population-based practice in public health.



**Public Health Association**  
AUSTRALIA

## Introduction

PHAA welcomes the opportunity to provide input to the Committee inquiry into the Coal-Fired Power Funding Prohibition Bill 2017.

## The Bill

The Bill establishes an Act to prohibit the Commonwealth government or its agencies from funding the refurbishment, building, purchasing or assisting in the transfer of ownership of, a coal-fired power station. The Act would allow for financial assistance to affected workers or managing the closure of the coal-fired power station.

## PHAA Response to the Bill

With the clear links between fossil fuels and adverse health impacts, and the rapid transition required to more efficient energy use and renewable energy sources, PHAA strongly supports this Bill to end the public subsidisation of fossil fuels.

### Fossil fuels in Australia

Fossil fuels have been the essential energy resource for enabling modern complex industrial society. As such, their use is embedded in government energy policy and practice. Both Government and industry see Australia's coal and gas reserves as an ongoing energy source for Australia, and a source of export revenue for the future.<sup>1-3</sup>

However, fossil fuel use has large scale detrimental environmental impacts resulting from the generation of emissions which amplify the planetary greenhouse effect leading to global warming.<sup>4</sup> In particular, the production of coal is one of the most greenhouse gas emission intensive activities in the world.<sup>5</sup>

Known fossil fuel reserves, if exploited, are sufficient to exceed the remaining global carbon budget five times over, so to limit global warming to less than 2 degrees, 80% of known reserves must remain undisturbed.<sup>7</sup>

The Australian coal fired power industry has not kept pace with technological improvements in other countries, lacking modern pollution control equipment. There is currently no financial or regulatory incentive for power station owners to move to cleaner use.

The 20 remaining coal fired power stations in Australia are not all equally polluting. Emissions of SO<sub>2</sub> per GWh generated vary by a factor of 5 from the cleanest to the dirtiest power station, and emissions of fine particulate matter (PM2.5) vary by a factor of 28.<sup>8,9</sup> All 20 will need to close in the next decades as they become uneconomic, and these closures will bring immediate health benefits.

The coal mining and electricity generation industries in the Hunter Valley in NSW are responsible for 85% of the health-damaging fine-particulate matter produced from all sources in the entire state of NSW – 29 times the amount produced by motor vehicles, 4 times that of burning including bushfires, 120 times that of farming, and 5 times that of metal ore mining.<sup>5</sup>

*PHAA submission on coal-fired power funding prohibition bill 2017*

## **Health effects of fossil fuels**

The detrimental effects of global warming upon human health are already very apparent.<sup>6</sup>

The World Health Organization has stated that there is no evidence of a safe level of exposure to fine particulate matter, nor any threshold below which no adverse health effects occur.<sup>10</sup> Particulates can trigger heart attacks and strokes, cardiovascular and respiratory illness, and are carcinogenic.<sup>5</sup>

Other health-damaging air pollutants produced in the process of mining and burning coal include sulphur dioxide, nitrogen dioxide, nitric oxide, carbon monoxide, hydrochloric acid, volatile organic compounds and polyaromatic hydrocarbons.<sup>5</sup>

## **Health effects for miners**

The processes of coal mining are themselves detrimental to the health of the people working in them. The very existence of the Coal Mine Workers' Health Scheme in Queensland<sup>11</sup> and the mine dust lung disease reforms<sup>12</sup> indicate the very real and serious health effects of coal mining for the workers.

Various physical health effects are associated with the processes of mining. The use of explosives to blast through rocks covering coal seams, wind erosion of large areas of overburden, unpaved roads around mine sites and the use of dragline excavators all contribute to an increase in dust and particulate matter.<sup>13</sup>

Blasting also produces toxic gases.<sup>14</sup> Coal mining also provides large quantities of waste products including coal 'slurry' and coal ash waste, both of which contain toxic pollutants.<sup>5</sup> Miners have been exposed to levels of dangerous gases many times higher than allowed under occupational exposure standards, sometimes resulting in hospitalisation.<sup>15, 16</sup>

Even coal industry funded research has noted that miners also have higher levels of psychological distress than the general community. This distress particularly relates to lower social networks; past history of depression, anxiety or alcohol/drug problems; recent high alcohol use; satisfaction with work; job insecurity and lower workplace support for people with mental health issues.<sup>17</sup>

## **Health effects for communities**

The mining, transport and combustion of fossil fuels, are detrimental to human health through local and regional pollution by particulates, volatile chemical exposures, and heavy metal dispersion, such as mercury.<sup>18-20</sup> The largest health impacts are from burning coal for electricity and from burning petroleum products for road transport. The air pollution from burning fossil fuels in road vehicles is especially damaging to human health as it is concentrated along urban roadways where many people are exposed.<sup>21</sup>

The estimated costs of health damages associated with coal combustion for electricity in Australia are over \$2.6 billion annually.<sup>5</sup> Globally, the annual health toll from coal combustion is estimated at nearly 400,000 deaths, almost 2 million serious illnesses and over 151 million minor illnesses.<sup>5</sup>

Local communities around coal mines have noted declining air quality, noise levels approaching twice the allowable maximum for industrial noise, and contamination of local rivers and water sources.<sup>5</sup>

Harms for local communities include health impacts; reduced water quality and availability; power imbalances among communities, government and industry; cost burdens from public subsidies of the industry and damages to the local community; imbalance of compensation and unequal wages; skills shortages in particular industries; reduced access to and affordability of accommodation; increases in anti-social behaviour; large and demographically unbalanced temporary population increase; and mining industry control over natural and financial resources.<sup>22</sup>

## *PHAA submission on coal-fired power funding prohibition bill 2017*

### **Health effects globally**

The most recent evidence highlights the urgency of reducing fossil fuel use, particularly for Australia.<sup>23, 24</sup> The effects on human health are severe, including illness, injuries, and deaths from extreme heat, extreme precipitation and flooding, worsening air pollution, the spread of infectious diseases, increases in food and water borne illnesses, reduced nutrition, and profound mental health harms.<sup>25</sup> The special IPCC report showed that 1.5°C warming will result in:<sup>26</sup>

- 350 million people exposed to deadly heat stress by 2050
- 530-550 million people experiencing under-nutrition
- Reduction in working hours by 6% due to heat stress
- Limiting warming to 1.5°C rather than 2.0°C could reduce the population exposed to climate-related water stress by 50%

### **Public subsidies of coal in Australia**

Investment in coal capacity has decreased substantially since 2009-10, and for most years since then, coal-fired generation has been removed from the market.<sup>24</sup> Industry and investment bodies are realising that coal is no longer a good investment. Australia has the most divestment from assets involved in fossil fuels of any developed nation, on a per capita basis.

The call for ending public subsidies of fossil fuels is not limited to Australia. In the UK, a cross-party group, including members of both the Conservatives and Labour, made the same call in July this year.<sup>27</sup> More than 1,000 divestment commitments have been made globally, by individuals, organisations, institutions and governments.<sup>28</sup> No longer simply an ethical consideration, divestment is increasingly being recognised as a good economic decision, and fossil fuel investment as a risk.<sup>29</sup>

Similarly, insurance companies in both Australia<sup>30</sup> and globally<sup>31</sup> are no longer supporting new coal fired power stations.

Despite this, Australia's public subsidies of fossil fuels have continued. In 2015, energy subsidies represented 2.3% of GDP, or \$1,198 per person.<sup>32</sup> Fiscal support through government budgetary transfers and tax breaks represent the biggest source of financing for coal in Australia.<sup>33</sup> Government support to coal consumption totals US\$870 million per year.<sup>33</sup>

### **Renewable alternatives**

The IPCC report limiting global warming to 1.5°C showed that:<sup>26</sup>

- reducing emissions in line with 1.5°C is 30 times cheaper than the economic damage that would result from allowing any warming above this level to 2.0°C
- limiting warming to 1.5°C is still possible – but only just. The most urgent focus must be on action to decarbonise the economy

Australia is lagging behind other high income countries, and 'policy inaction in this regard threatens Australian lives'.<sup>24</sup>

Renewable alternatives to fossil fuels including coal, are not only available, but more cost-effective.<sup>34, 35</sup> The cheapest way to produce power now is using renewables, not coal.<sup>36</sup> Continuing to use public funds to support coal is not justifiable from an economic, health, environmental or social perspective.



## Conclusion

PHAA strongly supports this Bill and recommends that it be passed. We are particularly keen that the following points are highlighted:

- coal is damaging to our health and environment
- coal is no longer economically viable
- renewables are available and more cost-effective
- critically, this Bill not only ends the unjustifiable waste of public funds, but also provides support for transitioning workers from the coal sector

The PHAA appreciates the opportunity to make this submission and the opportunity to support improving the health of Australia's through decreased support for damaging fossil fuels.

Please do not hesitate to contact us should you require additional information or have any queries in relation to this submission.

Terry Slevin  
Chief Executive Officer  
Public Health Association of Australia

Dr Peter Tait  
PHAA Convenor  
Ecology and Environment Special Interest Group

14 August 2019

## References

1. Massola J, Ker P, Cox L. Coal is 'good for humanity', says Tony Abbott at mine opening <https://www.brisbanetimes.com.au/politics/federal/coal-is-good-for-humanity-says-tony-abbott-at-mine-opening-20141013-115bgs.html>. Brisbane Times 2014 13 October
2. Department of Environment and Energy. Coal and coal seam gas - About <http://www.environment.gov.au/water/coal-and-coal-seam-gas/about>: Commonwealth of Australia; 2018 [cited 2018 31 July].
3. Gas Industry Social and Environmental Research Alliance. Researching the impacts of Australia's onshore gas industry <https://gisera.csiro.au/>: GISERA; 2018 [cited 2018 31 July].
4. IPCC. Summary for Policymakers. In: Climate change 2013: The physical science basis. Contribution of Working Group 1 to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press; 2013.
5. Armstrong F. Coal and health in the Hunter: Lessons from one valley for the world. Clifton Hill, Victoria: Climate and Health Alliance; 2015.
6. Smith KR, Woodward A, Campbell-Lendrum D, Chadee DD, Honda Y, Liu Q, et al. Human health: impacts, adaptation and co-benefits. In: Field CB, Barros VR, Dokken DJ, Mach KJ, Mastrandrea MD, Bilir TE, et al., editors. Climate Change 2014: Impacts, Adaptation, and Vulnerability Part A: Global and Sectoral Aspects Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press; 2014. p. 709-54.
7. Leaton J, Ranger N, Ward B, Sussams L, Brown M. Unburnable carbon 2013: Wasted capital and stranded assets. <http://carbontracker.live.kiln.digital/Unburnable-Carbon-2-Web-Version.pdf>: Carbon Tracker Initiative and Grantham Research Institute on Climate Change and the Environment; 2013.
8. Ewald B. Figures for relative pollution intensity of coal fired power stations. Unpublished; 2018.
9. Sahu R. Recommended retrofits for Loy Yang A, Loy Yang, B and Yallourn power plants. Report commissioned by Environmental Justice Australia; 2018.
10. World Health Organization. Health effects of particulate matter: Policy implications for countries in eastern Europe, Caucasus and central Asia. [http://www.euro.who.int/\\_data/assets/pdf\\_file/0006/189051/Health-effects-of-particulate-matter-final-Eng.pdf](http://www.euro.who.int/_data/assets/pdf_file/0006/189051/Health-effects-of-particulate-matter-final-Eng.pdf): WHO; 2013.
11. Business Queensland. Coal Mine Workers' Health Scheme <https://www.business.qld.gov.au/industries/mining-energy-water/resources/safety-health/mining/medicals/coal-workers-health>: Queensland Government; [updated 14 March 2019; cited 2019 9 August].
12. Business Queensland. Mine dust lung disease reforms <https://www.business.qld.gov.au/industries/mining-energy-water/resources/safety-health/mining/medicals/dust-lung-disease>: Queensland Government; [updated 1 March 2019; cited 2019 9 August].
13. Higginbotham N, Freeman S, Connor L, Albrecht G. Environmental injustice and air pollution in coal affected communities, Hunter Valley, Australia. Health & Place. 2010;16(2):259-66.
14. NSW Health. Mine blast fumes and you <https://www.health.nsw.gov.au/environment/factsheets/Pages/mine-blast-fumes.aspx> [updated 19 April 2013; cited 2019 9 August].
15. Attalla MI, Day SJ, Lange T, Lilley W, Morgan S. NOx emissions from blasting operations in open-cut coal mining. Atmospheric Environment. 2008;42(34):7874-83.
16. Upper Hunter miners exposed to toxic fumes. ABC News <https://www.abc.net.au/news/2013-09-20/upper-hunter-miners-exposed-to-toxic-fumes/4972192>. 20 September 2013.
17. Considine R, Tynan R, James C, Wiggers J, Lewin T, Inder K, et al. The Contribution of Individual, Social and Work Characteristics to Employee Mental Health in a Coal Mining Industry Population. PloS one. 2017;12(1):e0168445.
18. Castleden WM, Shearman D, Crisp G, Finch P. The mining and burning of coal: effects on health and the environment. The Medical journal of Australia. 2011;195(6):333-5.
19. Epstein PR, Buonocore JJ, Eckerle K, Hendryx M, Stout lii BM, Heinberg R, et al. Full cost accounting for the life cycle of coal. Ann N Y Acad Sci. 2011;1219:73-98.
20. McKenzie LM, Witter RZ, Newman LS, Adgate JL. Human health risk assessment of air emissions from development of unconventional natural gas resources. The Science of the total environment. 2012;424:79-87.



*PHAA submission on coal-fired power funding prohibition bill 2017*

21. Kim K-H, Kumar P, Szulejko JE, Adelodun AA, Junaid MF, Uchimiya M, et al. Toward a better understanding of the impact of mass transit air pollutants on human health. *Chemosphere*. 2017;174:268-79.
22. Morrice E, Colagiuri R. Coal mining, social injustice and health: A universal conflict of power and priorities. *Health & Place*. 2013;19:74-9.
23. Maibach EW, Sarfaty M, Mitchell M, Gould R. Limiting global warming to 1.5 to 2.0°C—A unique and necessary role for health professionals. *PLOS Medicine*. 2019;16(5):e1002804.
24. Zhang Y, Beggs PJ, Bambrick H, Berry H, Linnenluecke MK, Trueck S, et al. The *MJA-Lancet* Countdown on health and climate change: Australian policy inaction threatens lives. *MJA* 2018;209(11):doi: 10.5694/mja18.00789.
25. Watts N, Amann M, Arnell N, Ayeb-Karlsson S, Belesova K, Berry H, et al. The 2018 report of the *Lancet* Countdown on health and climate change: shaping the health of nations for centuries to come. *Lancet*. 2018;[http://dx.doi.org/10.1016/S0140-6736\(18\)32594-7](http://dx.doi.org/10.1016/S0140-6736(18)32594-7).
26. Global warming of 1.5°C an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development and the efforts to eradicate poverty: Summary for Policymakers, (2018).
27. McVeigh K. Ban government investment in fossil fuels, urges cross-party group of MPs. *The Guardian* <https://www.theguardian.com/global-development/2019/jul/08/ban-government-investment-fossil-fuels-cross-party-mps-aid>. 8 July 2019.
28. Hazan L, Cadan Y, Brooks R, Rafalowicz A, Fleishman B. 1000 divestment commitments and counting. <https://gofossilfree.org/wp-content/uploads/2018/12/1000divest-WEB-.pdf>: Fossil Free; 2018.
29. Arabella Advisors. The global fossil fuel divestment and clean energy investment movement 2018 report. <https://www.arabellaadvisors.com/wp-content/uploads/2018/09/Global-Divestment-Report-2018-1.pdf>: Arabella Advisors; 2018.
30. Morton A. Insurance giant Suncorp says it will no longer cover new thermal coal projects. *The Guardian Australia* <https://www.theguardian.com/australia-news/2019/jul/26/insurance-giant-suncorp-says-it-will-no-longer-cover-new-thermal-coal-projects>. 26 July 2019.
31. Marcacci S. Uneconomic coal could be squeezed out of European Union Power Markets by 2030. *Forbes* <https://www.forbes.com/sites/energyinnovation/2018/06/11/uneconomic-coal-could-be-squeezed-out-of-european-union-power-markets-by-2030/#55074a841796>. 11 June 2018.
32. Coady D, Parry I, Le N-P, Shang B. Global fossil fuel subsidies remain large: An update based on country-level estimates. IMF working paper WP/19/89. <https://www.imf.org/en/Publications/WP/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates-46509>: International Monetary Fund; 2019.
33. Gençsü I, Whitley S, Roberts L, Beaton C, Chen H, Doukas A, et al. G20 coal subsidies: Tracking government support to a fading industry. <https://www.odi.org/sites/odi.org.uk/files/resource-documents/12744.pdf>: Overseas Development Institute; 2019.
34. Blakers A, Lu B, Stocks M. 100% renewable electricity in Australia. <http://energy.anu.edu.au/files/100%25%20renewable%20electricity%20in%20Australia.pdf>: Australian National University; 2017.
35. Graham PW, Hayward J, Foster J, Story O, Havas L. GenCost 2018: Updated projections of electricity generation technology costs. <https://publications.csiro.au/rpr/download?pid=csiro:EP189502&dsid=DS1>: CSIRO & Australian Energy Market Operator; 2019.
36. Jotzo F, Mazouz F. Coal does not have an economic future in Australia. *The Conversation* <https://theconversation.com/coal-does-not-have-an-economic-future-in-australia-102718>. 2018 6 September 2018.