Briefing Paper for Clean Energy

Overview of Issue

**We need clean, healthy, safe, and sustainable energy systems**

Current energy systems in Australia are posing serious risks to health and contribute to emissions growth and climate change.

The burning of coal for electricity generation and other fossil fuels for transport poses serious direct risks to human health.

In contrast, renewable energy technologies that harvest natural resources such as wind and solar power provide clean, healthy, safe alternatives to fossil fuels such as coal, oil, and gas 7. It is estimated that black coal accounts for 51% of Australia’s energy production, brown coal 23%, 15% gas, 5% hydro, 2% wind, 0.1% solar PV, 0.9% bioenergy. 4

The impact of fossil fuel use is costing millions of lives every year. Coal costs between 210,000 and 387,000 deaths from direct combustion, while there are over two million indirect illnesses from coal alone. Air pollutants account for a large percentage of health costs including respiratory diseases such as asthma and lung cancer ([Climate-and-Health-Alliance\_Report\_Layout\_PRINTv2.pdf](file:///C:\Users\CAHA\Downloads\Climate-and-Health-Alliance_Report_Layout_PRINTv2.pdf).) 6

Additionally, coal mining can leak toxic chemicals into water sources, damaging ecosystems, and may enter the human bloodstream and cause other health complications 2 6. Fossil fuel production and extraction is carbon intensive and is a primary contributor to climate change, which exacerbates the intensity of bushfires, floods, heatwaves and other natural disasters, and diseases, contributing to loss of human life 5.

The financial cost of coal-fired power plants in Australia alone is conservatively estimated at $2.6 billion annually 2. When considering the local health costs of coal in the Hunter Valley, it is estimated a cost of $600 million per annum of externalised health costs in Australia. However, estimates of between $16 billion and $66 billion on a global scale of social costs are associated with the Hunter Valley coal industry. 6

Despite the numerous negative repercussions of fossil fuels, there has been a substantial increase in the number of coal, mining and coal seam gas plants in Australia. It is estimated that there are around another 30 new coal mines planned for NSW and Queensland 3. In the Hunter Valley, there has been an exponential increase in the number of coal plants in recent years. The Hunter Valley is currently Australia’s largest single source of CO2 emissions, costing 348 million tonnes per year, with health damages of $600 million per annum and 1800 deaths since being opened 6.

The expansion of Australia’s coal industry is out of sync with the global movement towards renewable energy. Australia has abundant renewable energy resources that are expansive and largely untapped. A 2010 report from Geoscience Australia and the [Australian Bureau of Agricultural and Resource Economics (ABARE)](http://www.abare.gov.au/) confirms Australia has a very large and widely distributed renewable resource base, which includes opportunities for wind, solar, bioenergy, geothermal, wave and tide as well as hydro resources.[[3]](http://arena.gov.au/files/2013/08/Australian-Energy-Resource-Assessment.pdf) (Geoscience 2010)

According to this report, Australia’s wind resources are “among the best in the world, primarily located in western, south-western, southern and south-eastern coastal regions but extending hundreds of kilometres inland”.

Our solar resources are also unparalleled: Australia has the highest average solar radiation per square metre than any other continent. The amount of the Sun’s energy falling on Australia in one day is equal to half the total annual energy required by the whole world. 3

Action

To combat climate change and lower Australia’s carbon footprint, there needs to be a rapid transition to renewable energies, and less of a reliance on fossil fuels for Australia’s energy needs. Recent analysis by Beyond Zero Emissions in 2010, shows that a transition to a 100% renewable energy market is affordable and can be accomplished relatively quickly.

The health liability of relying on fossil fuels for Australia’s energy system mean that a rapid transition to renewable energy is necessary to prevent any additional global warming and subsequent impacts to human health.

The Climate and Health Alliance asserts there are sufficient grounds for a reduction of fossil fuel technologies and an uptake in renewable energy. On the grounds of human health, we assert there are actions governments must take to incentivise renewable energies and discourage carbon intensive industries, such as coal and gas.

In addition, we propose that the government should implement some sort of carbon tax to discourage carbon intensive industries and subsidise renewable energies to encourage a market transition in Australia. Other proposals include a carbon trading scheme, where carbon credits can be traded which encourage utilising lower carbon emissions.

Other suggestions for the future of Australia’s energy market include a set of policies that encourage long-term energy security with the assistance of renewable energies. With the emergence of solar and wind power, there should also be more research into alternative renewable energies such as wave power and geothermal.

Recommendation

The action to address a transition to renewable energies away from fossil fuels needs to occur at multiple levels. At a federal level, large multinational corporations such as Adani threaten to dissect large areas of outback Queensland for profiteering and coal extraction. Community backlash and protests have halted progress as advocates argue the Great Barrier Reef will suffer from contamination of this large coal mine as well as climate change effects. Divestment away from fossil fuel industries has been an effective publicity and financial ploy by university, businesses and individuals alike. As greater awareness around the benefit of renewable energies swells, it is likely that low carbon options will become more popular, and the social, financial and environmental cost of fossil fuels industries will become too excessive to justify their means. Australia needs to transition to a low carbon economy based around renewable energies to prevent heightened global warming, and to adhere to Australia’s fair share of global emissions reduction.

**We need energy systems in Australia that reduce emissions and protect and people’s health. Cleaner, safer, and healthier energy options exist. It’s time to implement them.**

References

[[1]](http://caha.org.au/campaigns/healthy-energy/#_ftnref1) Physicians for Social Responsibility, *Coal’s Assault on Human Health*, November 2009.

[[2]](http://caha.org.au/campaigns/healthy-energy/#_ftnref1) Biegler, T. *The hidden costs of electricity: Externalities of power generation in Australia*, Report for the Australian Academy of Technological Sciences and Engineering (ATSE), 2009.

[[3]](http://caha.org.au/campaigns/healthy-energy/#_ftnref1) Geoscience Australia and ABARE, Australian Energy Resource Assessment, 2010, Canberra. Available at <https://www.ga.gov.au/image_cache/GA17412.pdf>

[4] Schulz and Petchey (2011), Energy Update, ABARES, accessed on 26th, October 2016 from <http://www.industry.gov.au/Office-of-the-Chief-Economist/Publications/Documents/aes/energyupdate_2011_report.pdf>

[5] Lloyd Smith and Senjen (2011), Hydraulic Fracturing in Coal Seam Mining: The risks to our health, community and climate, <http://ntn.org.au/wp/wp-content/uploads/2012/04/NTN-CSG-Report-Sep-2011.pdf>

[6] Armstrong, F (2015), Climate and Health Alliance, Hunter Coal Report, accessed from <http://d3n8a8pro7vhmx.cloudfront.net/caha/legacy_url/53/Climate-and-Health-Alliance_Report_Layout_PRINTv2.pdf?1439938112> on 26th October 2016

[7] Smith, K.R., A.Woodward, D. Campbell-Lendrum, D.D. Chadee, Y. Honda, Q. Liu, J.M. Olwoch, B. Revich, and R. Sauerborn, 2014: Human health: impacts, adaptation, and co-benefits. In: 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 [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel,A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L.White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 709-754.