



CLIMATE^{AND}
HEALTH
ALLIANCE

Submission to RET Review

May 2014

Contact:

CAHA Convenor
Fiona Armstrong
convenor@caha.org.au
0438900005
www.caha.org.au

ABOUT THE CLIMATE AND HEALTH ALLIANCE

The Climate and Health Alliance (CAHA) is a not-for-profit organisation that is a national alliance of organisations and people in the health sector working together to raise awareness about the health risks of climate change and the health benefits of emissions reductions.

CAHA's members recognise that health care stakeholders have a particular responsibility to the community in advocating for public policy that will promote and protect human health.

Membership of the Climate and Health Alliance includes a broad cross section of the health sector with 27 organisational members, representing hundreds of thousands of health care professionals from a range of disciplines, health care service providers, institutions, academics, researchers, and health consumers.

The Climate and Health Alliance, as its name suggests, is concerned with the health threats from climate change, and the organisation works to raise awareness of those risks and advocate for effective societal responses, including public policies, to reduce risks to health.

Parts of this work involves examining and seeking to mitigate the drivers of climate change, which in large part (in terms of Australia's contribution) arise from the burning of fossil fuels for energy and transport.

The focus of work is concerned with the health implications of these drivers, both from the perspective of health concerns from climate change, but also in relation to the direct and immediate health impacts associated with burning fossil fuels (from coal and gas in particular).

To this end, the Climate and Health Alliance, has produced a number of submissions in relation to national energy policy and other matters relating to climate change, and their impacts on health. It produced the report '[Our Uncashed Dividend](#)' with The Climate Institute on the health benefits of reducing greenhouse gas emissions; conducted a national [Roundtable on the Health Implications of Energy Policy](#); prepared a [Briefing Paper](#) on the same topic; produced a film on the risks to health and climate from coal and gas, [The Human Cost of Power](#); conducted a national [Forum on Climate and Health: Research, Policy and Advocacy](#); led the development of a joint health stakeholder Position Paper on Health and Energy Choices (forthcoming); and contributed to numerous conferences, community dialogues, and forums, both nationally and internationally on these issues.

The topic of energy and health, and therefore renewable energy and health, is a topic on which CAHA has considerable expertise and interest.

The Climate and Health Alliance makes this submission as a group of health organisations concerned at the impact on health and wellbeing from failing to support a transition away from fossil fuels and towards a low carbon, clean, healthy, safe, energy supply.

For more information about the membership and governance of the Climate and Health Alliance, please see Appendix A. For further information see www.caha.org.au

TERMS OF REFERENCE

This submission is largely relevant to the following Terms of Reference for the RET Review:

- The economic, environmental and social impacts of the RET scheme; and
- Whether the objective of the RET scheme is still appropriate.

KEY POINTS

1. The Renewable Energy Target (RET) is an important national policy to assist Australia to boost Australia's electricity supply from clean, renewable energy sources as a necessary transition away from fossil fuels in order to meet its greenhouse gas emission reduction obligations.
2. Renewable energy from sources such as wind and solar is Australia and the world's energy source of choice in this century and beyond – it helps deliver lower emissions energy options and produces less pollution and poses fewer risk to health and wellbeing and occupational health and safety than existing energy supply systems.
3. The RET has delivered increased capacity in renewable energy, and is an important contributor to reduced energy prices. In the medium to longer term, it will be a key factor in minimising energy price rises.

ECONOMIC, ENVIRONMENTAL AND SOCIAL IMPACTS OF THE RET

Why we need a Renewable Energy Target

The objectives of the Renewable Energy Target are to encourage the additional generation of electricity from renewable sources; reduce emissions of greenhouse gases in the electricity sector; and ensure that renewable energy sources are ecologically sustainable.¹

To date, the Renewable Energy Target has helped investment in renewable energy generation, avoided emissions and assisted in taking advantage of Australia's abundant renewable energy resources.

Policy initiatives such as the carbon price and the Renewable Energy Target have helped to slow the rate of growth in Australia's emissions, however much more needs to be done to achieve reductions in emissions consistent with the recommendations of scientists and Australia's global obligations to help avert any further increases in global warming.

Human induced climate change is already responsible for an increase of less than one degree in global average temperature, and is projected to rise to between two to six degrees above pre-industrial temperatures by 2100.

Climate change is already impacting on the health of Australians and that of people around the world. As temperatures rise, these health impacts will increase.

¹ Renewable Energy Target, Department of Finance, Available at: <https://www.finance.wa.gov.au/cms/content.aspx?id=14039>

Some examples of these health impacts include:

- The number of “dangerously hot” days, when increases in core body temperatures 2°C or more (which pose a serious health threat), is projected to rise from the current 4-6 days per year, to as high as 33-45 days per year by 2070.
- Severe drought associated with climate change is impacting on agricultural crop yields, affecting farmer’s incomes, and has been linked to psychological distress, particularly in rural areas of Australia.
- The record high temperatures and drought which led to the 2009 Victoria bushfires caused fires of unprecedented intensity and led to 173 deaths, 412 people suffering burns, 7,560 people displaced and thousands more affected by smoke.

The recent report from the Australian Climate Change Authority outlines the direction required for Australia in short and medium term emissions reductions in order to meet the stated 2050 emissions reduction commitments.

In 2012, Australia’s greenhouse gas emissions totalled 600 Mt CO₂-e, 2.5% above 2000 levels. In the absence of a carbon price or other effective policies, emissions are projected to grow to 685 Mt CO₂-e in 2020, 17% above 2000 levels.²

The Climate Change Authority has recommended a minimum 2020 target of 15% below 2000 levels, between 40 and 60% below 2000 levels by 2030, and 100% emissions reductions by 2050.³

Current proposals for Australia’s energy and climate policies are manifestly inadequate in their present form and without significant reform, or the retention and strengthening of existing policy, such as the carbon price and the Renewable Energy Target, will fail to deliver even a fraction of what might be considered Australia’s fair share of a global emissions budget.

Acting to reduce Australia’s emissions is not just a global obligation; it is strongly in Australia’s interests to reduce emissions and avert further climate change.

Current energy systems are harming the health of Australians and those who import Australia’s coal

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

The Australian Academy of Technological Sciences and Engineering estimate the health damage from Australian coal-fired power stations is around \$13 per megawatt hour, costing the

² CCA, 2014, Reducing Australia’s Greenhouse Gas Emissions: Targets and Progress Review—Final Report. Available at <http://climatechangeauthority.gov.au/caps>

³ ibid

Australia community \$A2.6 billion annually.⁴ Studies from overseas indicate the costs may be even greater.^{5,6,7}

Ill health and deaths associated with fossil fuel use is costing the Australian and global community billions of dollars annually from respiratory, cardiovascular and nervous system diseases caused by exposure to the extraction, transportation and combustion of coal, oil and gas.⁸ Air pollutants account for a large proportion of the health costs, contributing to: respiratory diseases such as asthma and lung cancer; cardiovascular diseases which lead to heart attacks; while mercury contributes to developmental delay and permanently reduced intellectual capacity in exposed children.^{9,10}

Heavy metals and carcinogens released during the processing of coal also contaminate water and food sources which can lead to long-term health problems.¹¹ In addition, the mining of coal exposes workers and local communities to dangerous coal dust, and it is a dangerous occupation in terms of health and safety.¹²

A recent study from the Harvard Medical School estimates the economic, health and environmental costs of the life cycle of coal is costing the US public a third to one half of a trillion dollars annually.¹³ The Harvard study looked at the lifecycle costs of coal, including mining, transport, processing and combustion, which are not accounted for by the coal industry and the costs for which fall onto the rest of the community in increased health costs, injuries, illnesses and deaths.

This study found if the estimated health and environmental costs of coal were included in the price of coal-fired electricity it would double or triple its cost, and make cleaner, safer, renewable energy generation cost competitive.

A 2011 study published in *American Economic Review* found that the gross external damages (largely from increased deaths) caused by coal fired power generation in the US amounted to

⁴ 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.

⁵ Markandya, A., and Wilkinson, P. Energy and Health 2: Electricity generation and health, *The Lancet*, Sep 15-Sep 21, 2007; 370, 9591.

⁶ Epstein, P. Full cost accounting for the life cycle of coal, *Annals of New York Academy of Sciences*, 1219: 73-98.

⁷ Muller, N et al. Environmental Accounting for Pollution in the United States Economy, *American Economic Review*, August 2011, 101, pp.1649–1675.

⁸ ATSE, 2009

⁹ Physicians for Social Responsibility, *Coal's Assault on Human Health*, November 2009.

¹⁰ Burt, E. et al 2013. Scientific evidence of the health effects from coal use in energy generation. Healthcare Research Collaborative, University of Illinois in Chicago and Health Care Without Harm Available at: <http://noharm-global.org/articles/news/global/coal-combustion-poses-serious-risks-human-health-review-finds>

¹¹ Smith, K. et al. 2013. Energy and Human Health, *Annual Review of Public Health*, Vol. 34: 159-188.

¹² ibid

¹³ Epstein, P. Full cost accounting for the life cycle of coal, *Annals of New York Academy of Sciences*, 1219: 73-98.

\$53 billion annually. This study demonstrated coal is costing the US economy more than the industry generates.¹⁴

Research from Europe published in the prestigious medical journal *The Lancet* estimates that 24 people die for every TWh of coal combusted, from the harmful effects of the airborne particulates, nitrogen oxide, and toxic metals such as mercury and lead released.¹⁵

A recent study at the University of Illinois in Chicago used this figure to estimate global deaths from coal combustion for energy generation, finding the worldwide health toll from air pollution due to coal combustion is 210,000 deaths, almost 2 million serious illnesses, and over 151 million minor illnesses per year, not including the effects of climate change.

Around 80% of Australia electricity supply, equivalent to around 170 TWh of electricity, is produced from burning coal.¹⁶ Applying *The Lancet* estimates to the Australian context would imply that 4,000 deaths each year are attributable to coal-fired power generation. The European study is based on quite different population densities and pollution controls to those in Australia, therefore the deaths in Australia cannot be confirmed without undertaking the research here. The evidence internationally and likely impact on the health of the national population should however be cause for both an investigation of the health impacts here from coal combustion for energy generation in Australia and a reconsideration of the national energy strategy in light of its harm to health.

The health of the populations in which exported Australian coal is burned should also be a consideration in decision-making about Australia's national energy strategy.

Policies that encourage renewable energy and impose a cost on fossil fuel powered electricity generation that reflect these damages therefore benefit the economy by avoiding the costs associated with ill health and associated productivity losses, as well as the costs of environment damage through compromised ecosystem services.

A recent review of the health costs associated with all forms of energy generation concludes the external (health and environmental) damages associated with renewable energy were very low compared to energy generation reliant on the combustion of fossil fuels.¹⁷

The available evidence suggests that the health benefits from reducing pollution from fossil fuels through strategies to reduce emissions could substantially offset the cost of emission reductions.¹⁸

¹⁴ Muller, N et al. Environmental Accounting for Pollution in the United States Economy, *American Economic Review*, August 2011, 101, pp.1649–1675

¹⁵ Markandya, A., and Wilkinson, P. Energy and Health 2: Electricity generation and health, *The Lancet*, Sep 15-Sep 21, 2007; 370, 9591.

¹⁶ ESAA, 2013, Electricity Gas Australia 2013. Available at: http://www.esaa.com.au/policy/EGA_2013 (See p.10 Overview Table 1.2: 112,794 GWh from black coal; 55,683 GWh from brown coal = 168,477GWh).

¹⁷ Smith, K. et al. 2013.

The huge contribution of coal-fired power generation to global warming and the strong evidence of its significant detrimental effects on human health means that the use of coal for power generation in Australia must be rapidly replaced by renewable energy technologies. Policies to support greater investment in renewable energy are therefore needed to drive this transition.

IS THE CURRENT RET STILL APPROPRIATE?

The RET helps mitigate policy uncertainty, create jobs and protect health

The recent report from the 2012 review of the Renewable Energy Target by the Climate Change Authority concluded that both 'push' and 'pull' policies were important in encouraging investment in and deployment of renewable energy.

Even with a carbon price creating a 'pull' incentive towards investing in renewable energy, the Renewable Energy Target has an important policy role in:

- mitigating the risks associated with uncertainty about the carbon price (both in Australia and elsewhere) since its abolition will suppress investment in renewable energy technology;
- mitigating the risk that the carbon price is lower than it needs to be to achieve the necessary emissions reductions;
- cutting the cost of climate change mitigation over time;
- creating benefits such as energy security, protecting public health, increasing competition and creating employment opportunities.¹⁹

Renewable energy delivers lower electricity prices and lower emissions

A recent analysis of the Australia's Renewable Energy Target by French based company Schneider Electric found that extending or expanding the existing RET would lead to lower electricity prices, lower carbon emissions and increased competition.²⁰

This analysis suggests that reducing or removing the renewable energy target would push electricity prices higher and create a greater reliance on expensive and high emissions gas-fired generation,²¹ putting those on lower incomes at risk and contributing to 'lock-in' of unsustainable, high cost and high emissions energy technologies.

¹⁸ Armstrong, F. 2012, Our Uncashed Dividend. Briefing Paper, Climate and Health Alliance and The Climate Institute, Available at: http://caha.org.au/wp-content/uploads/2010/11/OurUncashedDividend_CAHAandTCI_August20121.pdf

¹⁹ CCA, RET Review report, 2012. <http://climatechangeauthority.gov.au/node/63>

²⁰ Noort, J., Vanderzalm, S., Morris, B., & Zembrodt, L. 2014, Australia's Large Scale Renewable Energy Target: Three Consumer Benefits, Schneider Electric, White Paper.

²¹ Ibid.

This is supported by a University of NSW study that found policies pursuing very high penetrations of renewable electricity based on commercially available technology offer a cost effective and low risk way to dramatically cut emissions in the electricity sector.²²

Electricity generation from renewable energy sources such as wind is already responsible for significantly reducing the price impact of rising demand during heatwave events.²³

A report from independent energy consultants Sinclair Knight Mertz found in week prior to 19 January 2014, wind farms contributed around 6% of overall supply in SA and VIC, and as a consequence, wholesale prices were at least 40% lower than they would have been without the contribution of wind.²⁴

According to a 2012 report from Roam Consulting, the RET amounts to 2% of the average household electricity bill, however even this small proportion is expected to decrease if the RET is retained.

A 2014 report from Clean Energy Council demonstrates the retention of the RET, or other similar policy initiatives, will help lower electricity bills in the medium to longer term.²⁵

The CEC report indicates that while the RET is contributing to very small increases in higher electricity prices now (of the order of \$11 to \$22 a year for next 3-4 years), beyond that the RET will lead to reduced energy bills – if the right policy settings are retained.

Conclusion

The lower greenhouse gas emissions, lower costs and lower pollution levels associated with operating renewable energy generation infrastructure compared with fossil fuels-fired generation suggest Australia will benefit economically, environmentally, and with better outcomes for public health from maintaining, extending or expanding its renewable energy target (RET).

APPENDIX A

Climate and Health Alliance Committee of Management

²² Elliston, B. et al. 2013. Comparing least cost scenarios for 100% renewable electricity with low emission fossil fuel scenarios in the Australian National Electricity Market, Discussion Paper. Available at: <http://www.ies.unsw.edu.au/sites/all/files/LowEmissionFossilScenariosSubmitted.pdf>

²³ Sinclair Knight Mertz, 2014, Impact of Wind Generation on Prices. Available at: <http://blog.powershop.com.au/wp-content/uploads/2014/02/2014-02-SKM-MMA-Heatwave-Report-final.pdf>

²⁴ *ibid*

²⁵ Roam Consulting, 2014, RET Policy Analysis. Report for the Clean Energy Council. Available at: <https://www.cleanenergycouncil.org.au/policy-advocacy/renewable-energy-target/ret-policy-analysis.html>

Dr Liz Hanna, CAHA President (Australian College of Nursing)
Ms Fiona Armstrong, CAHA Convenor
Assoc Prof Erica Bell
Dr Brad Farrant (Australian Research Alliance for Children and Youth)
Dr Bret Hart (Alliance for Future Health)
Dr Peter Sainsbury (Public Health Association)
Dr Elizabeth Haworth (Friends of CAHA)
Alice McGushin (Australian Medical Students Association)

CAHA Organisational Members

Australian Association of Social Workers (AASW)
Australian College of Nursing (ACN)
Australian Council of Social Service (ACOSS)
Australian Hospitals and Healthcare Association (AHHA)
Australian Health Promotion Association (AHPA)
Australian Medical Students Association of Australia (AMSA)
Australian Physiotherapy Association (APA)
Australian Institute of Health Innovation (AIHI)
Australian Women's Health Network (AWHN)
Australian Nursing Federation (ANF)
Australian Psychological Society
Australian Research Council for Children and Youth (ARACY)
Australian Rural Health Education Network (ARHEN)
CRANaplus
Doctors Reform Society (DRS)
Friends of CAHA
Health Consumers' Network (Qld)
Health Issues Centre (HIC)
Kooverup Regional Health Service
Psychology for a Safe Climate
Public Health Association of Australia (PHAA)
North Yarra Community Health (NYCH)
Services for Australian Rural and Remote Allied Health (SARRAH)
Women's Health East
Women's Health in the North
World Vision Australia

Expert Advisory Committee

Dr Erica Bell, University Department of Rural Health, University of Tasmania
Associate Professor Grant Blashki, Nossal Institute for Global Health
Associate Professor Colin Butler, College of Medicine, Biology and Environment, Australian National University
Professor Garry Egger, School of Health & Human Sciences, Southern Cross University
Professor David Karoly, Federation Fellow in the School of Earth Sciences, University of Melbourne
Professor Stephan Lewandowsky, School of Psychology, University of Western Australia
Dr Peter Tait, Convenor, Ecology and Environment Special Interest Group, Public Health Association
Professor Simon Chapman, Professor of Public Health, University of Sydney
Dr Susie Burke, Senior Psychologist, Public Interest, Environment & Disaster Response, Australian Psychological Society