



CLIMATE^{AND}
HEALTH
ALLIANCE

Submission in response to
Energy White Paper
Issues Paper

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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.

Our members are committed to protecting and advancing the health of Australians, now and in the future. In recognition of the significant influence of greenhouse gas emission mitigation policies exerts on current and future human health and well-being, some of our member organisations have also prepared submissions to this inquiry, and we endorse their submissions.

The organisations represented collectively by CAHA speak to protect the health of their patients and clients, for the Australian population at large, and for their own families. Our specialist expertise lies in identifying health determinants. These are the factors that directly, and indirectly, contribute towards good health, or poor health outcomes, and cover risky behaviour patterns, harmful exposures, and policies that are likely to impact population health. It is on this basis that CAHA presents this submission in response to the Energy White Paper Issues Paper.

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

Key points

1. Current energy systems in Australia pose serious direct risks to human health and wellbeing and affect global health by contributing to emissions growth and subsequent climate change
2. Energy policy must be developed cognisant of the broader consequences of energy choices and consistent with the evidence with regard to the best interests of all Australians and the global population
3. A transition to a 100% renewable energy supply system is in the interests of Australia's energy security, economic stability, and safety and security of the population
4. Australia is well positioned to make a transition to a clean renewable energy future from which it can benefit economically
5. A comprehensive suite of policies are needed, in addition to a price on carbon, to develop a healthy, safe, sustainable energy future for Australia

Introduction

The Energy White Paper Issues Paper indicates the Energy White Paper to be delivered in 2014 will “set out an integrated and coherent Australian Government position on energy policy”.

That intention is welcome; however the Issues Paper preceding this White paper completely overlooks the key issue affecting energy policy globally and nationally – climate change.

As stated by the US Department of Defense in its [Quadrennial Defense Review Report](#) in February 2010, “climate change, energy security, and economic stability are inextricably linked.”

Greenhouse gas emissions from the burning of fossil fuels is the primary driver of climate change and constraining emissions must therefore be a central goal of national and global energy policy.

Australia currently has two key policies in place that help to constrain emissions: the carbon price legislation and the Renewable Energy Target. The former policy is slated for removal, and the latter is under review.

The Climate and Health Alliance supports both the carbon price and the Renewable Energy Target, while also calling for much stronger emissions reductions targets and the implementation of a broader suite of energy and climate policies to address the complex task of reforming our energy supply system into a low emissions, clean, safe, and sustainable system. We believe this requires the rapid phasing out of all forms of fossil fuels for energy and transport, and the transition to a 100% renewable energy supply system as quickly as possible.

It is only this direction for energy policy that can deliver energy security, economic stability and the necessary emissions reductions to prevent further perturbation of the Earth’s climate. The consequences of failing to do so carry grave implications for human health and wellbeing in the medium to long term, and without sustained and substantive mitigation, will ultimately lead to the demise of human society.¹

The Climate and Health Alliance responds below to the specific subjects on which the government seeks comment in relation to energy policy.

Security of energy supply

The proposals laid out on the Australian Government Issues Paper with regard to energy security ignore the overwhelming evidence of the harm caused to local communities and the stability of the Earth’s climate by our carbon intensive global economy. Added to this the increasingly challenging and costly exploration for diminishing supplies of fossil fuels indicate that the nation’s energy security does not lie with the carbon intensive resources discovered and developed since the 18th century, but with abundant renewable energy resources with which Australia in particular is blessed.

¹ Hanna EG. Health Hazards. In: Dryzek JS, Norgaard RB, Schlosberg D, editors. The Oxford Handbook of Climate Change and Society. Oxford: Oxford University Press; 2011. p. 217-31.

Achieving security of energy supply at this point in our history requires supporting and investing in lowest emission energy technologies and resources. Continuing to invest in fossil fuels runs the risk of stranded assets as energy demand shifts towards less polluting fuels as consumers, businesses and nations seek to respond to the global obligation to cut greenhouse gas emissions.

A new report *'Stranded Down Under?'* from Oxford University,² commissioned by HSBC Bank, indicates Australian coal resources are at risk of becoming stranded assets, ie "assets that have suffered from unanticipated or premature write-downs, devaluations or conversion to liabilities". This is related to a range of environment-related risks, including climate change, a shift internationally to new policy frameworks such as carbon pricing, changing community attitudes to carbon intensive industries, as well as emerging legal liability risks.

The report authors warn: **"these risks are poorly understood and regularly mispriced, which has resulted in a significant over-exposure to environmentally unsustainable assets throughout our financial and economic systems"**.

The report highlights the risk to state budgets from a failure to anticipate the risks of stranded coal assets, and recommends governments minimise their exposure to coal by diversifying their tax base eg away from the royalties paid by mining companies. It also recommends **"state and federal governments reduce their exposure to stranded coal assets by limiting the use of public funds and resources that support coal-related infrastructure, such as ports and railways"**.

The Government seeks comment on ways to increase new gas infrastructure. As with coal, the Government's Issues Paper overlooks the greenhouse implications of gas, and thus risks energy security as well as the risk of stranded gas assets by failing to anticipate and support a transition away from carbon intensive energy sources towards more secure, renewable energy resources.

A recent analysis from Australian National University³ on risk for investors in oil and gas highlights the financial vulnerability of the oil and gas extraction and processing sector to extreme weather events such as cyclones, and warns climate change will further increase the exposure of oil and gas companies to climate, energy and carbon price risks.

Fugitive emissions from unconventional gas also pose a financial as well as a climate risk. Emissions of methane that escape during exploration and extraction are increasingly recognised as occurring at much higher than currently reported, suggesting gas is much more carbon intensive than the industry will

² Caldecott, B. et al. *Stranded Down Under? Environment-related factors changing China's demand for coal and what this means for Australian coal assets*, 2013. Available at: <http://images.smh.com.au/file/2013/12/16/5013079/Stranded1.pdf?rand=1387151593788>

³ Smith, M. *Assessing Climate Change Risks and Opportunities For Investors: Oil and Gas Processing Sector*. Report for Investor Group on Climate Change. Available at: http://www.igcc.org.au/Resources/Documents/oil_gas_assessing_climate_change_risks_for_investors.pdf

admit. A shift to carbon pricing across the world will impose huge financial liability on gas production, potentially costing the Australian gas industry billions of dollars a year.⁴

Increases in gas consumption and exports will contribute significantly to national and global emissions.

International risk specialists that recognise the limitations imposed by a finite 'carbon budget' warn that between 60-80% of coal, oil and gas reserves of publicly listed companies are 'unburnable' if the world is to have of avoiding a global average temperature increase of 2°C above pre-industrial levels.⁵

The report [Unburnable carbon 2013: Wasted capital and stranded assets](#)⁶ from the CarbonTracker Initiative and [the Grantham Research Institute](#) at the London School of Economics revealed that fossil fuel reserves already far exceed the carbon budget to avoid global warming of 2°C, but in spite of this, the fossil fuel industry spent \$674 billion in 2012 to find and develop new potentially stranded assets.

Scientists warn that allowing warming to exceed 2°C could unleash irreversible, and (for humans and much of biodiversity) catastrophic climate conditions.⁷

The chief economist at the International Energy Agency, Fatih Birol, said in 2011 that the world has just five years to dramatically alter the way it uses energy, and that unless investment in fossil fuels ceases, and the world begins the wide-scale and rapid deployment of renewable energy technology and energy efficiency measures, we may lose the opportunity to prevent irreversible climate change.⁸

Australia's energy security can only be assured if investments in carbon intensive resources and infrastructure are avoided, and the renewable energy sector expanded until it provides 100% of Australia's electricity demand.

This can occur at a cost that is no greater than business as usual and will likely be less; after all, new-build wind power is now cheaper in Australia than new-build coal or gas powered generation.⁹

Regulatory reform and the role of government

The Energy White Paper provides an opportunity for the Government to outline a responsible, forward thinking, sustainable energy agenda that ensures Australia's energy needs are met in a way that does not compromise the safety, security, and health and wellbeing of its citizens, takes advantage of the nation's abundant renewable energy resources, and ensures a safe, sustainable, and affordable energy industry into the future.

⁴ ibid

⁵ <http://www.carbontracker.org/wastedcapital>

⁶ ibid

⁷ Meinhausen, 2009

⁸ Harvey, F. World headed for irreversible climate change in five years, IEA warns, The Guardian, 9 November 2011.

⁹ http://www.carbontracker.org/wp-content/uploads/downloads/2013/05/Unburnable-Carbon_Australias_Carbon_Bubble.pdf

There is an important role for government in intervening through regulation and policy settings to deliver this agenda.

At present, energy policy in Australia is delivering perverse outcomes, with our carbon intensive energy sector contributing to climate change as well as causing harm to health and wellbeing.

The health burden associated with coal and gas imposes a substantial financial burden on the community, through lost ecosystem services due to environmental harm, on health budgets due to illnesses and deaths, and on national accounts from lost productivity.¹⁰

A 2009 study evaluating the economic costs associated with coal fired power generation on health and environment in Australia by the Australian Academy of Technological Sciences and Engineering (ATSE) found that the health costs of burning coal are equivalent to a national health burden of around \$A2.6 billion per annum.

If the currently unaccounted for total climate and health costs are considered (including greenhouse gas effects) the estimate rises to \$8.3 billion annually.¹¹

There is also serious health concerns associated with expansion of the gas industry worldwide. Unconventional gas exploration and extraction carries potentially significant human health and environmental impacts, as well as risks to animal health,¹² however many of these risks are currently unquantified.

There are serious concerns being raised with regard to the safety of chemicals used in the coal seam gas mining process known as 'fracking' in Australia - with potential risks of neurological, respiratory, reproductive, cardiovascular, endocrine and kidney disorders.¹³

Current regulatory frameworks in the energy sector in Australia fail to protect human health. According to a recent report by Doctors for the Environment Australia, there is no adequate evaluation of the implications for human health occurring during the approvals process for energy resource projects.¹⁴ While there is an expectation that health impacts be addressed during mandatory Environmental Impacts Assessments, the evaluation of potential health risks by state governments is often rudimentary and fails to adequately protect the health of the community.

Subsidies to the fossil fuel sector contribute to these perverse outcomes and should be phased out.

Energy regulations should include emissions standards for power stations and transport, as well as energy efficiency standards for buildings and appliances. New renewable energy infrastructure should

¹⁰ Beigler, ATSE, 2009.

¹¹ ibid

¹² Carey. M. Coal Seam Gas: future bonanza or toxic legacy? Viewpoint, 23 January 2012, p.26-31.

¹³ Lloyd-Smith, M. and Senjen, R. Hydraulic Fracturing in Coal Seam Gas Mining: The Risks to Our Health, Communities, Environment and Climate, Briefing Paper, prepared for the National Toxics Network, February 2011.

¹⁴ Doctors for the Environment, Australia, 2013, *The Health Factor: Ignored by Industry, overlooked by government*, Adelaide. Available at <http://dea.org.au/images/general/DEA - The Health Factor 05-13.pdf>

be supported by loan guarantees to encourage the financial sector to invest and taxation incentives reformed to ensure clean technologies are encouraged, while polluting technologies are discouraged.

Regulation that protects human health, community cohesion and resilience and environmental sustainability (and hence a 'social licence to operate') should be strengthened. Industry development that threatens these should be not just impeded but prevented.

The Climate and Health Alliance supports the retention of important policies such as carbon price and the Renewable Energy Target.

The Renewable Energy Target has worked effectively to deliver safe low cost power generation to substitute for polluting technologies and should be expanded to deliver a more rapid transition to clean health and safe power generation for Australia.

While the carbon price should be higher to reflect the health and climate costs of using fossil fuels for energy generation and transport, it has already been demonstrated to contribute to lower emissions. In addition, a suite of comprehensive policies must be developed to ensure Australia's future energy security in light of a substantial and imminent carbon liability.

From the perspective of health and medical stakeholders, the Climate and Health Alliance asserts that there is strong evidence on the basis of protecting human health for governments to:

- introduce policies to rapidly increase the deployment of renewable energy;
- ban the further development of coal-fired power generation;
- correct the failure of markets to include the externalised costs of power generation through penalties for harm; and
- establish incentives to encourage energy resources that do not cause harm.

Trade and international relations

Energy policy must be developed cognisant of the broader consequences of energy choices and consistent with positive relations with the global community.

There are serious economic risks and foreign policy risks in failing to plan for a low carbon future for Australia. At present Australia's energy policy assumes an ongoing and expanding market for coal exports. However recent reports suggesting that China intends to cap coal energy consumption by 2015 have serious economic implications for Australia.¹⁵

In contrast to the claims that Australia's economy is threatened by a carbon price, it is more likely that Australia faces serious economic risks by "persisting with an economy not structured for a carbon-constrained future", say analysts at Melbourne's Grattan Institute.¹⁶

¹⁵ Parkinson, G. *China threatens to pierce coal export bubble*, *Reneweconomy*, 12 March 2012. Available at <http://shar.es/gLbjc>

¹⁶ Daley, J. and Edis, T. *Restructuring the Australian economy to emit less carbon*, Grattan Institute, April 2010.

Energy policy matters to investors: large global financial investors are looking for national energy policy choices that will facilitate investment in the new global green economy based on clean renewable energy resources.

A recent report on [Investment Grade Climate Change Policy](#) from an international group of 285 investors with global assets worth more than \$20 trillion, says “massive investment in low carbon energy is required” with investors calling for greater certainty with respect to climate and energy policy initiatives in order to facilitate private sector investment in low carbon industries.¹⁷

The global market for renewables is growing rapidly, with \$251 billion invested globally in clean energy in 2011,¹⁸ which followed a 32% rise in green energy investments worldwide in 2010.¹⁹

Unless Australia begins to position itself to take advantage of the new low carbon economy, and begins to stimulate serious investment in renewable energy, we risk further entrenching a twentieth century fossil fuel based economy that creates serious carbon liability for Australia in both economic and foreign policy contexts.

Together with the possibility of declining revenue from fossil fuel exports in coming decades, a failure to prepare for petroleum scarcity has the potential to lead to serious economic consequences for Australia.

Australia's reliance on imported oil for industry and transport makes it vulnerable to economic shocks from rapidly rising oil prices. Our society depends on oil for many basic products and services, including healthcare, making it extremely vulnerable to oil price and supply shocks.

Global oil production has not risen in the last six years, despite increasing demand and an expanding global population.²⁰

This energy white paper should be considering how Australia will prepare for and manage the risks of peak oil and declining global supply.

By 2015, it is anticipated that Australia will be importing 80% of its oil, and 95% of current transport options rely on oil.

The Australian Government Bureau of Infrastructure, Transport and Regional Economics anticipates a global decline in oil production by 2017, the resulting task of replacing oil from 2017 described as "challenging to most economies around the world".²¹

¹⁷ Sullivan, R. [Investment Grade Climate Change Policy: financing the transition to a low carbon economy](#), report commissioned by Institutional Investors Group on Climate Change, Investor Network on Climate Risk, the Investor Group on Climate Change and the United Nations Environment Programme Finance Initiative, September 2011.

¹⁸ Wroe, D. [Global investment in clean energy hits record levels](#), *Sydney Morning Herald*, 14 January 2012.

¹⁹ United Nations Environment Program, *Global Trends in Renewable Energy Investment 2011*, July 2011.

²⁰ City of Stirling, [Oil risk strategy, Part 1](#), January 2012.

²¹ Australian Government, Bureau of Infrastructure, Transport and Regional Economics (BITRE), [Transport energy futures: long-term oil supply trends and projections, Report 117](#), 2009, Canberra, ACT.

A recent report from the University of Oxford and the University of Washington, published in the journal, *Nature*, has argued prospects for future economic growth rest on the ability of governments to wean societies off fossil fuels.²²

Energy scarcity associated with diminishing fossil fuel resources as well as a decline in the social licence of fossil fuel use may lead to national and international security problems associated with pressure on personal and state and national budgets.²³

A failure to cut emissions has been identified as a potential international security threat, with nations that fail to mitigate likely to drive political tensions nationally and internationally.²⁴

Alternative and emerging energy sources

Australia is well positioned to make a transition to a clean renewable energy future from which it can benefit economically.

Australia has abundant renewable energy resources that are the envy of the world. A 2010 report from Geoscience Australia and the Australian Bureau of Agricultural and Resource Economics (ABARE) confirms Australia has a very large and widely distributed renewable resource base, which includes wind, solar, bioenergy, geothermal, wave and tide as well as hydro resources.²⁵

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 kilometers inland”.

Our solar resources are also unparalleled: Australia has the highest average solar radiation per square metre than any other continent.²⁶ 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.²⁷

Despite these abundant energy resources, Australia has failed to capitalise on securing our energy future by investing in technologies to harvest the clean, renewable, (and free) energy provided by sun and the wind and the waves.

The Zero Carbon Australia 2020 Plan was developed by the Melbourne Energy Institute (MEI) and research consultancy Beyond Zero Emissions (BZE) in 2010. This plan demonstrates that Australia has

²² Murray, J. and King, D. Climate policy: Oil's tipping point has passed, *Nature*, 2012, Vol: 481, pp.433–435.

²³ http://www.cfr.org/content/publications/attachments/Energy_Security_Workshop_Paper.pdf

²⁴ European Council, Climate Change and International Security, Paper from the High Representative and the European Commission, 14 March 2008.

²⁵ Geoscience Australia and ABARE, Australian Energy Resource Assessment, 2010, Canberra. Available at https://www.ga.gov.au/image_cache/GA17412.pdf

²⁶ Geoscience Australia and ABARE, chapter 10.

²⁷ Australian Academy of Science, *Australia's renewable energy future*, December 2009.

sufficient renewable energy resources to power its entire stationary energy sector, but shows the transition to 100% renewable energy is affordable and can be accomplished in a short time frame.

These findings are supported by research from Stanford University that shows that the world could be powered entirely with renewable energy within 20-40 years, using technology that is available today and at a cost comparable to that of conventional, fossil-fuel-based energy.²⁸ Like the MEI/BZE report, the Stanford modelling uses wind and solar as the predominant resources, finding that the barriers to the implementation of policy to deliver this scenario are not technological or financial but social and political.²⁹

Despite the claims of detractors from the fossil fuel sector, as identified in the 2010 report on renewable energy by the Australian Academy of Science, reliable renewable energy technologies such as wind and solar are commercially available right now for electricity generation.³⁰ Wind can achieve a capacity factor of up to 50% in Australian conditions, and solar thermal can provide base load power due to its ability to store power for up to 16 hours.

A landmark study published in *The Lancet* in 2009 found there are significant health gains possible from decarbonising the energy sector.³¹ These improvements in health can deliver large financial savings: a 2010 report from Europe found the European Union could save €80 billion a year in health costs from cutting emissions through moving to cleaner energy systems.³²

The *Acting Now for Better Health* report found that improvement in air quality from moving to cleaner energy systems would deliver significant improvements in population health and lead to more productive workplaces.

Shifting to clean renewable energy systems is better for health, and can save billions of dollars annually in avoided ill health and productivity gains.³³

Nuclear energy is not a feasible energy option for Australia. Radiation from nuclear power poses serious health threats, and risk of cancers. Uranium mining is linked to endocrine disruption, contamination of water supply and food chains.³⁴

²⁸ Bergeron, L. The world can be powered by alternative energy, using today's technology, in 20-40 years, says Stanford researcher Mark Z. Jacobson, *Stanford Report*, 26 January 2011.

²⁹ Delucchi, M. and Jacobson, M. Providing all global energy with wind, water, and solar power, Part II: Reliability, system and transmission costs, and policies, *Energy Policy* 39 (2011) 1170–1190.

³⁰ Australian Academy of Science *ibid*

³¹ Markandya, A. Public health benefits of strategies to reduce greenhouse gas emissions: low carbon electricity generation, *The Lancet*, Health and Climate Change Series 3, November 2009.

³² Health Care Without Harm (HCWH) and the Health and Environment Alliance (HEAL), *Acting Now for Better Health*, 2010, Brussels.

³³ Armstrong, F. *Our Uncashed Dividend*, Climate and Health Alliance and The Climate Institute, 2012.

³⁴ Smith, K. et al. 2013, Energy and Human Health, *Annual Review Public Health*, Vol.34, pp.159–88.

Recommendations

The Climate and Health Alliance calls for:

1. The immediate removal of fossil fuel subsidies, currently estimated at \$12 billion a year³⁵
2. These funds to be redirected to support the roll-out of large scale renewable energy
3. No further approvals for coal fired power generation facilities in Australia
4. All new power generation to require a health impact assessment in addition to an environmental impact assessment
5. A moratorium on unconventional gas exploration until proven safe for human health
6. The creation of additional incentives to encourage clean sustainable technologies and disincentives to discourage those that cause harm
7. The development of a national plan to transform Australia to a zero emissions economy

³⁵ Webb, R. [Fossil fuel taxes](#), Background Notes, Parliament of Australia, 10 January 2012.