



CLIMATE^{AND}
HEALTH
ALLIANCE

SUBMISSION
TO
SENATE STANDING COMMITTEE ON ENVIRONMENT AND
COMMUNICATIONS
INQUIRY INTO DIRECT ACTION PLAN

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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 submission to this inquiry, and we endorse their submissions.

The professional 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 to the Inquiry on the Direct Action Plan.

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

Summary of Key Points

- Access to affordable energy has been a key factor in economic development that has been associated with health advancements.
- Australia's future demands ongoing access to affordable energy sources.
- Historic fossil fuel sources of energy have directly impacted negatively on human health.
- Indirectly, the burning of fossil fuels is causing global interruptions to climate patterns, notably exacerbation of the greenhouse effect, and this is generating global warming, interruptions to precipitation patterns, and increasing the frequency and intensity of extreme weather events.
- Cleaner energy sources are available that do not harm human health or the environment.
- Australia's natural climate is hot, and further warming is increasing hazardously hot weather. Australians are already dying in their hundreds.
- Australia's highly variable rainfall patterns present challenges for agriculture and food security. Exacerbation of this variability threatens the livelihoods of rural communities, and future food security. These are health issues.
- The Australian government has a duty of care to rapidly transform Australia to a low carbon economy, via driving a shift in energy sources, away from hazardous and towards cleaner renewable supplies, and to do so in a manner that allows ready community access to affordable energy supplies.
- The proposed Direct Action Plan will not deliver that required shift, and in so doing will be responsible for risking further morbidity and mortality.

Overview

The global dominance of fossil fuels as energy source (1) is detrimental to planetary health and human health (2). The international medical journal *The Lancet* in May 2009 described climate change as the biggest global health threat of the 21st century (3). Since then, it has become apparent that climate change is posing serious and immediate threats to the health and wellbeing of the Australian and global populations, and the implications for human health and wellbeing in the medium to long term are grave. A wealth of evidence now testifies that, the continued unabated burning of fossil fuels will ultimately lead to the demise of human society (4). That pathway will be paved by human misery, suffering and conflict (5).

The current atmospheric load of greenhouse gas emissions is sufficient to disrupt planetary climate systems, as demonstrated by the series of unheralded extreme heat events that have occurred across the globe in recent decades. (6) Altered precipitation patterns have delivered a series of extreme droughts, floods and storms, which have displaced millions of people worldwide, and delivered millions of people into hunger (7). Inertia in the system means that even if global emissions ceased today, at current atmospheric carbon levels, there is more warming(8) and more travesty awaiting.

Human health effects are currently being felt worldwide (9). Although an island and a wealthy nation, Australia is not immune to the negative effects of climate change. The increases in the severity and frequency of extreme weather events precipitated by anthropogenic global warming poses serious health risks to all people around the world (10). Indeed Australia's natural climate is already one plagued by heat, droughts, fires , floods and cyclones. Climate change is now exacerbating the worst of Australia's climate. January heat waves and fires are now the summer norm. Hobart reached 38.9°C on Jan 28th 2014(11). Meanwhile, in Victoria, the statewide average maximum temperature exceeded 41°C on four successive days from 14 to 17 January, surpassing the record of three successive days set in 2009 (12).

The Copenhagen Accord declared that deep cuts in global greenhouse gas emissions are required *“so as to hold the increase in global temperature below 2 degrees Celsius”* (13). Since December 2009, 140 countries have associated themselves with the Copenhagen Accord. Of these, 85 countries have pledged to reduce their emissions or constrain their growth up to 2020. However existing Copenhagen Accord pledges, if achieved, will exceed that limit, and deliver a temperature increase of between 2.5 to 5° C before the end of the century (13).

The 2°C guardrail was ever an artificial limit, and has since been revealed it will NOT offer sufficient protection from the harms of climate change. Even a 2°C limit heralds significant loss of species, major reductions in food-production capacity in developing countries, severe water stress for hundreds of millions of people, and significant sea-level rise and coastal flooding” (14). To avert human suffering, it is therefore imperative for the world's nations to elevate their ambitions in emission reduction, and apply a suite of policies to:

- a) rapidly convert their fossil fuel based economies to “clean” renewable energy sources; and
- b) embark on programs to withdraw carbon dioxide from the atmosphere.

Health ramifications of fossil-fuelled climate change

- **Access to affordable energy has been a key factor in economic development that has been associated with health advancements.**

CAHA acknowledges that access to adequate, affordable, reliable, safe and environmentally benign energy is critical to fostering lasting social and economic development and to achieving the Millennium Development Goals (15). Energy is therefore central to nearly every major challenge, and opportunity

the world faces today. Be it jobs, security, climate change, food production or increasing incomes, access to sustainable energy for all is essential for strengthening economies, protecting ecosystems and achieving equity (16). Australia's access to cheap energy has contributed to our wealthy status, relative to much of the world. Consequently, our usage per capita has become among the worlds highest.

- **Australia's future demands ongoing access to affordable energy sources.**

High energy intensive economies such as Australia are interlinked with energy prices. Restructuring society will inevitably involve costs and a time delay to fully convert. Yet, these ought not be considered barriers, rather than as investments to secure Australia's future as carbon-derived energy sources become increasingly untenable.

We can make substantial inroads now. The relative cost of renewable energy supplies is becoming increasingly attractive (17). Removal of subsidies to fossil fuel energy sources, overt and otherwise, would further realign the true cost of energy sources (18).

If Australia's health costs (current and future), were factored into the cost equation of burning coal and gas today, a shift to renewables would be seen immediately as cost effective. Also factoring in the costs of emergency management, repairs to infrastructure, and loss of industry, agriculture, tourism and services, alongside the social decline, makes the logic of actively steering the country towards renewables irresistible.

- **Historic fossil fuel sources of energy have directly impacted negatively on human health.**

The direct health consequences arising from the burning of fossil fuels stem from exposure to particulates (poor air quality) (19). Chronic respiratory and cardiovascular disorders predominate in these conditions (20). From any aircraft travel, the grey-brown blanket of air pollution can be seen stretching well past the city boundaries, well inland, and rising for thousands of feet. Breathing this 'soup' exacerbates existing conditions, precipitates asthma attacks and heart attacks. Evidence is now also suggesting that PM2.5 triggers inflammation and diabetes (21).

- **Indirectly, the burning of fossil fuels is causing global interruptions to the climate patterns, notably exacerbation of the greenhouse effect, and this is generating global warming, interruptions to precipitation patterns, and increasing the frequency and intensity of extreme weather events, ocean acidification and rising sea levels. These effects translate to a range of diverse indirect health impacts.**

Predictions of future extreme weather events by the IPCC in their 2012 *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation Report* (6) indicate extreme rainfall will increase, while droughts will be longer and more intense. Extreme fire danger days will increase. There

may be fewer cyclones, but they are likely to be stronger and cause more damage. As sea levels continue to rise, the extent of coastal erosion causing inundation from storm surges will increase. The scientific literature on the health effects arising from climate change is now extensive, testifying to far reaching implications, many of which interact to further potentiate the effects.

Bushfires

Bushfires cause injuries and fatalities, and lead to people losing their homes and businesses, and communities losing schools and other services, such as healthcare. Exposure to toxic smoke, particulate matter(22), and increased levels of ground level ozone causes acute and chronic respiratory illness and can be fatal (23). Fires also establish long term health issues. The 1983 Ash Wednesday fires were associated with subsequent increased general illness, significant increases in alcohol and drug abuse and an almost 300% increase in mental illness.

Children are also particularly vulnerable to the increased exposure to trauma and stress associated with disasters. Children surveyed 6 months after the 2003 bushfires in Canberra showed much higher rates of emotional problems. Nearly half had elevated symptoms of Post-Traumatic Stress Disorder (28.6% with mild, 12.1% with moderate, 7.5% with severe, and 1.5% with very severe PTSD.) (24) The study revealed that younger children and individuals with greater exposure to, and perception of, threat experienced higher levels of PTSD and general psychopathology.

Storms and flooding

Extreme rainfall and cyclones result directly in fatalities and injuries in addition to the spread of disease (25). People involved in clean-up activities are also at risk of injuries and contamination by toxic or infective agents. Floods can cause sewage contamination of potable water supplies resulting in diarrhoeal diseases and skin and soft-tissue infections (25). Fatigue and psychological stress can exacerbate exposure risks when people are operating in sub-optimal conditions.

Long term health issues emanate from mould growth from damp conditions that inevitably follow flooding, raising susceptibility to respiratory illness and asthma. The degradation of building materials following floods can lead to emissions of toxic gases known as volatile organic compounds (VOCs), such as phthalates. Rotting vegetable and animal matter also present significant health risks.

Floods and cyclones disrupt normal services and can severely affect health care services: the 2011 Qld floods caused 1,396 surgical cases to be cancelled, which led to a 73% increase in waiting times for elective surgery. Predictions of extreme weather events suggest there is likely to be considerable further increases in both the demand for, and the impacts on, health services as a result. This will place burdens on already overstretched services and personnel and healthcare infrastructure (26).

Heat

Working in the heat is becoming more difficult in hot nations. Humans need to maintain a stable temperature around 37°C. As warm blooded animals, humans generate their own heat, and find optimal thermal environment (heating and air-conditioning temperatures) of choice to be within the range of 20-23°C, less if exercising. Extra heat generated by working muscles must be dissipated to the environment. The rate of heat loss reduces as ambient air temperatures approach 35°C, and this is worse in high humid environments, when the air is already saturated, and the skin-air gradient is low. Continued working risks overheating, collapse and even death (27).

A raft of additional health issues exist (28). These include food and water borne diseases, such as salmonellosis and other bacterial gastroenteritis(29) which are associated with increased incidence in warmer temperatures(30), and vectors (31), notably, the spread of the mosquito to new niches, giving rise to malaria and dengue fever.

Over the past decade, bushfires in Australia have generated an average annual loss of approximately \$160 million. Yet economic estimates include only a fraction of the full impact. They do not account for the loss of life, social disruption and trauma, opportunity costs for volunteer fire fighters, fixed costs for bushfire fighting services, government contributions for rebuilding and compensation, impacts on health, and ecosystem services(32)

Increases in extreme weather events and fires devastate impacted communities. In addition to potential loss of life, people and communities in the aftermath of a natural disaster suffer a variety of losses, including all or some of the following:

- loss of life;
- physical suffering;
- emotional and psychological suffering;
- damage to residential, commercial and industrial property;
- reduced productivity;
- degraded environment;
- loss of species and habitats;
- damaged power, transport and telecommunication infrastructure;
- weakened economy;
- loss of livelihood;
- destabilized community coherence (including isolation, marginalisation and displacement);
- destabilised political situations; and
- reduced quality of life (33).

Recovery from such trauma takes many years, and communities may never rebound to their pre-event status. For the individuals involved, these translate to health and behavioural, problems, that can flow through generations.

Unless well resourced, health and social services can fail to service the complex needs of these people, serving another cruel blow to the victims, and making recovery more problematic.

Conflict

Research drawing from archaeology, criminology, economics, geography, history, political science, and psychology demonstrates strong causal evidence linking climatic events to human conflict across a range of spatial and temporal scales and across all major regions of the world. Previously under-estimated, the magnitude of climate's influence is now known to be substantial. Hsiang et. al, report that for each 1 standard deviation (1σ) change in climate toward warmer temperatures or more extreme rainfall, median estimates indicate that the frequency of interpersonal violence rises 4% and the frequency of intergroup conflict rises 14%. The effects escalate as food and water become scarce. The projected warming of warm 2 to 4σ by 2050, will amplify the rates of human conflict (34). It cannot be assumed that Australia will remain free from impact as global conflict rises

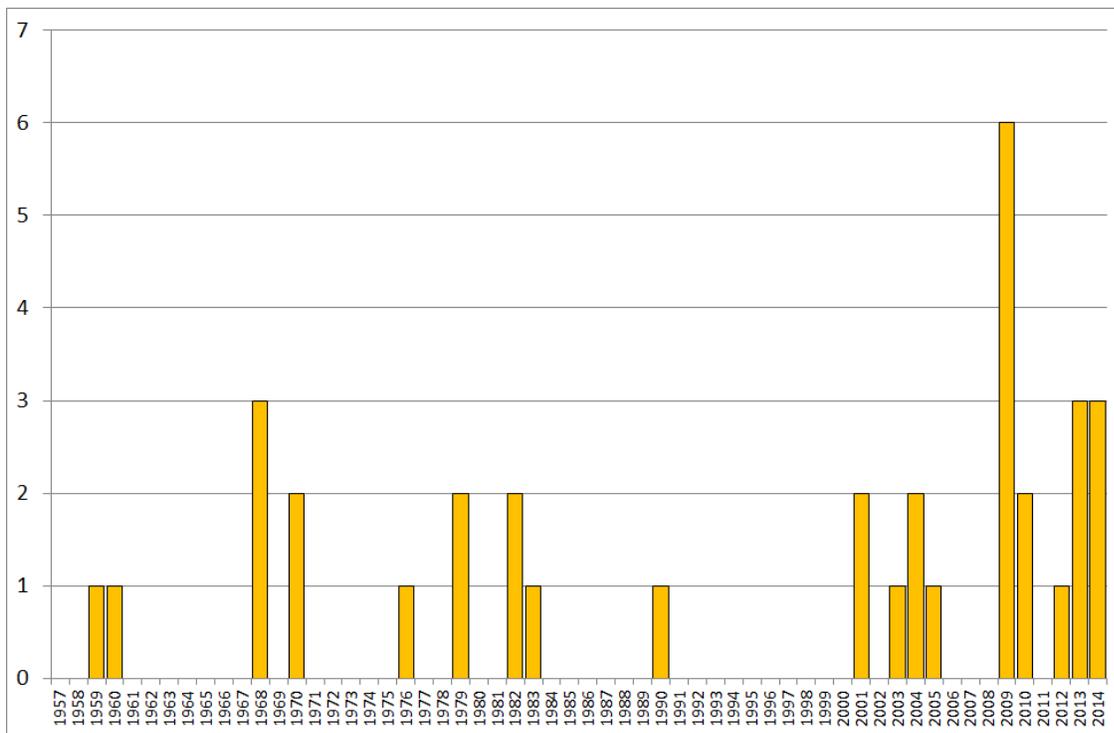
- **Cleaner energy sources are available that do not harm human health or the environment.**

Australia enjoys abundant sun for solar energy and wind for wind power. Her coastline and geology also offer vast opportunities for wave and geothermal sources of energy.

- **Australia's natural climate is hot, and further warming is increasing hazardously hot weather. Australians are already dying in their hundreds.**

Globally, each of the past 13 years (2001 to 2013) has ranked among the 14th warmest on record. Australian temperatures have warmed approximately 1°C since 1950, consistent with global climate trends. Whereas the global average temperature (1961-1990) was $\sim 14^{\circ}\text{C}$, Australia's landmass is almost **8** degrees higher at 21.8°C (35). Many Australians are already living close to the thermal maximum. Warming further is a direct health risk. Compared to the period 1957 to 2000, the number of days over 45°C since 2000 in Victoria has increased fivefold ($1.5 : 0.3$ days/yr) (36).

In 2009, 374 people died in the Melbourne heatwave, more than double the official death toll of 173 for the Victorian fires of that year, and again in the January 2014 heat wave there were another hundred reported deaths. Many more people are dying from heat stress throughout Australia, yet the true health burden is difficult to quantify, as these deaths are often recorded as a consequence of heart failure. Also, low population densities in the hotter remote towns render such analyses difficult due health privacy laws which place limitations on data access.



Number of days per year on which at least one location in Victoria has reached 45°C. (Source : BoM: Note: 2014 data as of 19 January)(36).

Victoria’s healthcare system demonstrated it had not incorporated the lessons from 2009. It remained ill-prepared to cope with the January 2014 extreme heat event. There remains a dearth of awareness and education on the health effects of climate change, which reflects in Australia’s health professionals’ demonstrated lack understanding, and health planners’ lack of preparedness. This affects the ability of both individuals and the health care system to prepare for and respond to extreme weather events. Consequently, and needlessly, lives are put at risk – not only the lives of those already threatened by climate change eg people who are chronically and/or mentally ill, elderly, homeless and infants and children – but of all Australians, as we are all vulnerable to extreme weather events.

This emerging health risk should constitute a national emergency, and warrants the establishment of a **Royal Commission on Heat**. It should receive tri-partisan support, appropriate funding, carry the authority to influence policy across sectors, and have the capacity to collate the evidence. A **National Heat Authority** forming out of the Commission ought be tasked with working with policy makers and stakeholders, and adapting Australia to our hotter future. The lack of awareness among many Australians about the links between climate change and extreme weather events, such as increasing likelihood and severity of heat waves, including the implications for human health, is cause for serious concern and should be addressed as a matter of urgency.

Heatwaves can exacerbate mental illness, worsen chronic illnesses (37), and lead to increases in alcohol and drug abuse(38), domestic violence, and violent crime (39). Australians are already living with

intolerably high temperatures. A significant investment in public health, research into adapting to the heat, and coordinated planning should be a national priority to address this new major health burden.

- **Australia's highly variable rainfall patterns present challenges for agriculture and food security. Exacerbation of this variability threatens the livelihoods of rural communities and future food security. These are health issues.**

Agricultural systems are intrinsically linked with environmental conditions which are already under threat in much of southern Australia due to rising heat and aftermath of the millennium drought. Droughts are currently devastating northern rural communities, who a few years ago suffered the worst floods in recorded history. Australia's future climate that has more intense and more extreme heat waves and droughts is likely to bring deleterious effects directly to human health, and indirectly by challenging the viability of agriculture and hence, communities dependent on primary production(40). A continuation of this trend will inevitably herald the collapse of some communities (41). Human health and social impacts arising from such transition would be profound, as demonstrated by investigation into rural communities during the Millennium Drought (42). Preparation and planning is required to ease the associated loss and grief, and assist people re-establish productive lives elsewhere.

Ocean acidification interrupts the marine food web by limiting the formation of exoskeletons, notably of krill (43), the foundation of the marine food web. Combined with warming sea temperatures and over-fishing, projections suggest a diminishing capacity of the oceans to continue to sustain population protein demands (44).

The productivity of important agricultural crops is drastically reduced when they experience short episodes of high temperatures during the reproductive period (45). Temperate and sub-tropical agricultural areas might bear substantial crop yield losses due to extreme temperature episodes and they highlight the need to develop adaptation strategies and agricultural policies able to mitigate heat stress impacts on global food supply (46). Crop heat stress presents an important threat to global food supply, and to Australia's food production. In 2010, when more than 20% of Russian agricultural producing areas were affected by unprecedented extreme high temperatures, wheat prices increased by up to 50% in the international market (47). Factors other than extreme heat such as increasing atmospheric CO₂ and O₃ concentrations, changes in soil moisture and vapour pressure deficit, increases in mean temperatures, interact to determine the overall crop response to environmental change (45). However, extreme heat during the reproductive period could lead to complete crop failure, and is therefore particularly risky for farmers (47).

Plant heat stress due to increased temperature is now an agricultural problem in many areas in the world. Transitory or constantly high temperatures cause an array of morpho-anatomical, physiological and biochemical changes in plants, which affect plant growth and development and leads to a drastic reduction in economic yield (48).

Animals are also subject to heat stress. Increases in tick related losses (possibly due to increased range of parasite) and reduction in stock carrying capacity of native pastures will result in possible yield decrease (up to approximately 40% in the near worst case scenario of a projected 32% drop in precipitation). Feedlotting and dairy are predicted to struggle under reduced water availability and rising heat extremes (49).

ABARES reports that drought conditions in Queensland are driving a forecast of reduced winter crop production in the state by 20 per cent in 2013-14, and by December, had also forced sales of thousands of cattle, and dropping prices. Overall, farm cash income of broadacre farms in drought declared areas in Queensland is projected to decline from an average of \$148 400 a farm in 2012-13 to an average of just \$55 000 a farm in 2013-14. This represents a 45% drop in real terms from the 10 year average to 2011-12. Average farm business profit in drought declared areas of Queensland is expected to decline from an average profit of \$24 200 a farm in 2012-13 to an average loss of \$52 000 a farm in 2013-14 (50).

Agricultural decline sparks a cascade of community devolution, rural economies wither as people are forced off their land, and town populations shrivel to below the critical mass required to remain viable. This translates to mental health issues (51), notably suicides, domestic violence, and a raft of social and health manifestations (52). Children are particularly vulnerable to these situations (53).

- **The Australian government has a duty of care to rapidly transform Australia to a low carbon economy, via driving a shift in energy sources, away from hazardous and towards cleaner renewable supplies, and to do so in a manner that allows ready community access to affordable energy supplies.**

Climate change effects are not uniform across countries, as some are more exposed, and some are more vulnerable to their exposures than others. This differing sense of national risk creates diverging incentives for action. The absence of a global authority to enforce cooperation across nations undermines collective efforts, combined with the free-riding problems, as each country hopes that others will bear the cost of climate change mitigation.

In October 2009, the European Council of heads of state and government agreed to the long-term political objective of reducing the EU's emissions of greenhouse gases by between 80 and 95 per cent by 2050, compared to 1990 levels (54).

Despite being highly exposed to effects of climate change, Australia has failed to meet its full responsibilities in global climate change efforts and our ongoing reluctance to make substantial inroads is earning us a reputation of selfish short-sightedness. Our historical emissions mean that per-capita we are more responsible for climate change than most people in the world, and our CO₂ emissions still remain recklessly high. This combination of high historical contribution and low acceptance of

responsibility is completely unacceptable. In so doing, Australia abrogates any claim to moral judgments on the actions of other countries.

Mitigating climate change is a prime example of a global public good that requires collective action. Collective action is needed, because while each country may prefer that others supply the good (free-riding on others), each must recognize that if everyone depended on others to supply the good, the result would be bad for everyone, akin to the *tragedy of the commons*. Australian policymakers *cannot rely on external stakeholders* to push for more policy ambition, especially when Australian legislators demonstrate a reluctance to do so. There are clear and powerful population health advantages to be realized in collective action to mitigate against climate change.

While renewable energy stakeholders may have had a relatively strong voice in the determination of international climate policies, (54) these voices are notably excluded from the elaboration of policy on in Australia. It is also disappointing to see that climate scientists and climate impact experts have been ejected from the advisory positions. There is an obvious need for health expertise in contributing advice on matters that threaten health to such an extent. Good governance requires accurate, authoritative information. Limiting advice to vested interests risks poor decision making.

- **The proposed Direct Action Plan will not deliver that required shift, and in so doing will be responsible for risking further morbidity and mortality.**

CAHA is not particularly qualified to assess the efficacy of climate policies to reduce GHG emissions via economic levers. We do however carry expertise in the assessment of the likelihood of success of policies that attempt to modify human behaviours, including those incorporating price signals as incentives or aiming for self-initiated behaviour change.

Health policy research has contributed a significant body of knowledge to the fields of tobacco consumption, drug and alcohol usage patterns, unhealthy diets, road behaviours, violence and more. A consistent theme throughout is that people will continue to take the easy option, to follow a habit, unless motivated to alter (55). Additionally, in a commercial context, taking action that requires a level of effort, investment or risks even short term negative economic consequences, albeit minor, are unlikely to attract widespread buy-in. This is especially pronounced in situations where the full benefits are not directly felt by the individual, or in this case, a company. Altruism in commercial enterprises has limited success.

Behaviour change requires the cognitive realisation that “I” am likely to be harmed, and that the harm will be sufficient to warrant averting (56). Immediate gratification (cheap pollution) is overvalued versus later pain (more expensive business operational adjustment), which is discounted. Besides, someone else may need to deal to with the problem.

Our reading of the Direct Action Plan appears to be largely voluntary, with minimal ‘carrot’ or ‘stick’ to entice change. The accompanying political rhetoric, laced with negative language about climate change

reality, and constant reference to economic hardship awaiting those who do attempt to reduce emissions, will we believe, be the final deterrent for many considering decarbonising.

Beyond this, CAHA relies on the experts of the field to assess the likelihood of DAP on reducing Australia's contribution to climate change. However, we find it alarming that economic analyses have almost uniformly assessed the Direct Action Plan DAP as ineffective, or having minimal prospects of delivering minor, unsustainable reductions in emissions. Indeed, some analysts have suggested the DAP will result in *increased* emissions, between 8%-10% to 2020 (57), and economists who assisted in the development of the DAP have asserted an additional required expenditure of \$10 billion "was at the *lower end* of the range" (58). Whereas there was broad industry and economic affirmation that incentive based emission reduction strategies, via carbon/emissions trading, would provide an effective, fair and transparent mechanism, with high likelihood of generating the change required.

Concluding remarks

Future changes in climate extremes, such as tropical cyclones, heat waves, and extreme precipitation events, would degrade Australian infrastructure and public health, for example, through increased energy demands, maintenance costs for transportation infrastructure, and coastal flooding. Avoiding, or at the very least reducing, the adverse effects of climate change is a global challenge, yet one that will generate direct benefits for species and habitat conservation, saved lives, and reduced economic and infrastructure costs. For Australia, such constraints on global warming would give natural ecosystems and their associated species greater time to adapt to changing environmental conditions, reduce the likelihood of major adverse consequences for agriculture and forestry, help ensure Australia's public health infrastructure can keep pace with emerging health challenges, and reduce the chance of large-scale singularities. (59)

Emission pathways consistent with a "likely" chance (66% probability) of meeting the 2° C limit generally peak before 2020, with steep emission reductions afterwards and/or reach negative emissions in the longer term. Thereafter, between 2020 and by 2050, average annual reduction rates of CO₂ from energy and industry of around 3 per cent are required, and by 2050 global emissions should reduce to 50-60 per cent below their 1990 levels (13). On the basis of current observations of extreme weather events, it can be argued that 1°C warming is too great. A 66% probability of remaining below 2°C is therefore beyond the bounds of reason. Failing to achieve even that renders coastal cities flooded, millions hungry, disease ridden, undernourished and displaced. Meanwhile Australia will lurch ever more violently between storms, floods, droughts and fires under a relentless burning sun.

Climate change is a complex, crosscutting, long-term and global problem. At less than one degree average global warming, the early signs of altered climate patterns are already manifesting as widespread damage across the globe. Such impacts will be felt worldwide as the environmental and social foundations of population health—food and water supplies, natural constraints on infectious

diseases, natural barriers against environmental disasters, and the stability and cohesion of societies—are disrupted and weakened (28).

Risk management involves not only considering trade-offs but also taking synergies into account. These can make both preparation for and consequences of risk less costly. They can also diminish risks and increase expected benefits. These “win-win” situations are widespread and should be emphasized—which is not to say that they are costless or always easy to implement. Investments that secure Australia’s long term food security are also investments in nutrition. Similarly, investments that reduce health harm equate to health promoting investments, and savings for the health budget, by reducing health care costs, and costs in disability allowances and welfare support. These strategies improve resilience and make people more productive, whilst reducing their vulnerability to climate change, and to other shocks (60).

However, ineffective mitigation subjects humanity to dire consequences, and delayed emissions reduction will further intensify the potential for damaging urban and agricultural landscapes, food production and industry, livelihoods and people’s health.

Inaction on climate change is currently threatening the lives and health of all Australians. Those most immediately affected include people in rural and remote areas, the disadvantaged, poor, unwell, homeless, elderly or very young. Yet, the wealthy and ‘advantaged’ are not immune. Eventually we will all be rendered to the vulnerable categories.

Recommendations

- Given the gravity of the health effects that will inevitably unfold as a result of tardy, or ineffective carbon reducing policies, the health sector regard it morally repugnant to wilfully risk the lives of more Australians by developing policies that subject us all to a scientifically predicted awful future.

Australia’s approach to climate change must be centred on a plan that is guaranteed to have maximal effect in reducing Australia’s contribution to greenhouse gas emissions. Australia must ultimately carry our share of GHG withdrawal from the atmosphere to provide any chance of returning the planet to the pre-industrial ‘goldilocks’ temperature zone. CAHA advocates the following in terms of emissions reductions:

- Australia to commit to **stronger emissions reductions targets** of 50% by 2020 and 80% by 2050 ¹
- **Expansion of the Renewable Energy Target (RET)** to 60% by 2020
- Expansion of the carbon price to **include more industries (e.g. transport)**
- **Removal of fossil fuel subsidies** and redirection of funds towards renewables

¹ Of 1990 levels. See den Elzen, M. et al. Analysing the greenhouse gas emissions reductions of the mitigation action plans by non Annex 1 countries by 2020, *Energy Policy*, 2013, 56, pp.633-643.

- Development of **sector specific incentives to encourage emissions reductions** in all sectors
 - **Complementary measures** to promote renewable energy, such as loan guarantees and feed in tariffs
 - A **national plan to transition away from fossil fuels**, including **cessation of coal exports**
 - A **moratorium on unconventional gas**
- Effective carbon reduction policies are fundamental to protecting health from climate change, including from extreme weather events and their aftermath. To be effective, these must be implemented in cooperation with state, territory and local governments, civil society and community organisations and businesses. Climate scientists and health experts cannot be excluded from the mix.
 - As a national priority, and with the substantive response that a threat to national and global security demands, urgent action must be taken to reduce national greenhouse gas emissions in order for Australia to assume its fair share of the global responsibility to reduce emissions in order to arrest further climate change.
 - Establish a **Royal Commission on Heat**, to collate the evidence about the full health burden, and strategies to avert the growing death toll, with tri-partisan support, appropriate funding, and carrying the authority to influence policy across sectors.
 - This Commission should then set the framework for the Establishment of a **National Heat Authority**; Membership, and Terms of Reference to drive the changes required within and external to the health sector, in order to protect health from the ravages of heat.
 - Establish a **National Agency for Climate and Health** with responsibility for developing and coordinating climate and health policy and research, and overseeing Australia's response to the broader climate risks to health. Co-membership of personal with health expertise on the both the **National Heat Authority**, which would extend beyond the health sector, and the **National Agency for Climate and Health** would streamline coordination and efficiency.

APPENDIX A

Climate and Health Alliance Committee of Management

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Fiona Armstrong, CAHA Convenor
Erica Bell (Australian Rural Health Education Network)
Brad Farrant (Australian Research Alliance for Children and Youth)
Bret Hart (Alliance for Future Health)
Peter Sainsbury (Public Health Association)
Kristine Olaris (Women's Health East)
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)
CRANApus
Doctors Reform Society (DRS)
Friends of CAHA
Health Consumers' Network (Qld)
Health Issues Centre (HIC)
Kooverup Regional Health Service
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

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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
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