Australian Medical Students' Association Submission to the Climate Change Authority Special Review

The Australian Medical Students' Association would like to draw the review panel's attention to the immense importance for the health of Australians of an ambitious commitment from Australia to an effective and equitable global response to climate change and the potential health benefits of an Emissions Trading Scheme.

Key Recommendations

1) **An early post-2020 target of 40% reduction in emission on 2000 levels by 2025.**
2) **An intermediate post-2020 target of 60% reduction in emissions on 2000 levels by 2030 consistent with the CCA recommendations.**
3) **A long term post-2020 target of 95% reduction in emissions on 2000 levels by 2050.**
4) **A national emissions budget for 2013–2050 of 10,100 Mt CO2-e**
5) **Recognise the overwhelmingly negative health impacts of climate change, and subsequently factor in the associated economic burden in the health sector should the above targets not be met.**
6) **Recognise that mitigation policies have the potential to improve the health of Australians, thereby resulting in economic savings in the health sector, which may, in part, reduce the costs of transition to a low carbon economy.**
7) **Commit to the development of an Emissions Trading Scheme or similar carbon pricing mechanism that will have benefits for human health.**

Overview

The Australian Medical Students' Association (AMSA) is the peak representative body for Australia's 17,000 medical students. AMSA's key mandate is to connect, inform and represent students studying at each of the 20 medical schools in Australia. Furthermore, AMSA believes that all communities have the right to the best attainable health, and accordingly seeks to advocate on issues that may impact health outcomes.

AMSA acknowledges that climate change is the greatest threat to human health of the present century and threatens the health of communities both in Australia and globally. Accordingly, AMSA actively seeks to advocate on issues that may impact on health outcomes by affecting mitigation of climate change.

Medical students around the country feel strongly that the Special Review by the Climate Change Authority should consider the health impacts of climate change, and their associated economic burden, in addition to the health co-benefits of certain mitigation policies, and their associated economic gains.

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Inadequate mitigation against climate change will adversely affect the health of Australians, thereby increasing government health expenditure, and reducing workforce productivity.

Climate change is the biggest threat to global health of this century. (1) Climate-related health risks are already harming the health and wellbeing of Australians, and the following can be expected to worsen in the future (2-5):

- Increased deaths and injuries, particularly among children and the elderly, related to worsening heat waves and other extreme weather events.
- Increased demand on health and emergency services during extreme weather events.
- Damage to hospitals, health and other public and private infrastructure from rising sea levels, and increased frequency of severe floods and storms.
- Spread of food, water, and mosquito-borne infectious diseases, due to rising temperatures, changing rainfall patterns and floods and storms.
- Increased water scarcity and food insecurity from drought and floods.
- Exacerbation of respiratory illness from increased air pollutants and airborne allergens.
- Mental health problems in people living in communities affected physically and financially by the impacts of climate change.
- Health consequences of population dislocation as regions become uninhabitable.
- National security threats relating to political destabilisation in regions with food and water insecurity and mass migration.

These overwhelmingly negative impacts on health will be felt disproportionately by the most marginalised groups in Australia, rural and indigenous Australians, low-income individuals and families, children, the elderly, and people with chronic diseases. (4)

Hughes and McMichael (4) emphasise that federal government spending on health has increased over the last decade. The recent Intergenerational Report also highlights that government health expenditure per person is projected to double over the next 40 years to a total of 5.5 per cent of GDP in 2055. (6) The report points out that this will be driven by both demographic factors of population growth and population aging, in addition to non-demographic factors including increased prevalence of chronic diseases. (6) This report does not factor in the above impacts of climate change on health, particularly the impacts on the elderly and chronic disease patients, which will derive further economic burden for future generations. (4)

Furthermore, increases in illness due to climate change will also reduce workforce productivity, adding to the economic burden, and reducing the international competitiveness of Australian businesses. For example, bacteria that cause gastroenteritis are predicted to spread as a result of climate change. (4) Brambrick et al. estimate that by 2050 there will be between 205,000 and 335,000 new cases of bacterial gastroenteritis in Australia each year, and up to 870,000 cases by 2100. An additional 335,000 cases could result in $92.3 million in health and surveillance costs and 1.6 million lost workdays. (7)

The degree of additional healthcare costs and loss in worker productivity will depend largely on the cumulative efforts of countries around the world to mitigate against climate change. It will also depend on the degree to which the Australian

government develops domestic adaptive strategies. To this end, AMSA recommends for the review panel to not only recognise the health impacts of climate change, but to factor into its formulations the additional financial burdens of increased illness due to climate change and lost worker productivity. These financial burdens can be minimised if the Australian government commits to our aforementioned recommended emissions reduction targets, consistent with what is required to limit warming to 2 degrees.

Mitigation policies with health co-benefits may reduce the costs of transition to a low carbon economy, allowing for more ambitious emissions reduction targets.

Fortunately, strategies to tackle climate change can have the added benefit of improving human health. Coal-fired power stations, motor-vehicles, and intensive livestock agriculture are not only driving climate change by releasing greenhouse gases, but also contribute to poor health through air-pollution, inactive transport, and poor diets respectively. (8)

Air pollution can cause cancer, as well as kidney, respiratory, and cardiovascular disease in children and adults. (8, 9) Long-term exposure to urban air pollution accounts for 1.5% of all deaths in Australia and short-term exposure accounts for a further 0.8%. (10) The Australian Academy of Technological Sciences and Engineering estimates that the health costs of burning coal are equivalent to a national health burden of around $2.6 billion per annum. (11) With the additional consideration of the impacts associated with coal's contribution to climate change, a report has found that coal production in the Hunter Valley alone contributes a global social cost of $16-66 billion per annum. (12) The annual health cost of pollution from cars, trucks and other modes of fossil-fuelled transport in Australia is estimated at around $2.7 billion. (13) Thus policies that reduce reliance on fossil fuel combustion for energy and transport offer potentially large savings in the health budget.

Many of the non-communicable diseases that cause a high burden of disease in Australia are associated with a carbon intensive lifestyle. (14-16) Physical inactivity and diets high in animal products can contribute to the development of obesity, diabetes, ischaemic heart disease, hypertension, stroke, dementia, depression, breast cancer and bowel cancer. (8) All of these can be considered chronic diseases, which the Intergenerational Report points out, are already costly for our health budget and will continue to attract more expense in the future. (6) Physical inactivity causes over 13,000 deaths in Australia per annum (17) and it is estimated that the UK National Health Service (NHS) spends $US5,000 per minute treating diseases that could be prevented by regular physical activity. (18) Transitioning to more active forms of transport, such as walking, cycling, and public transport can have health economic savings, while reducing greenhouse gas emissions. Current cycling levels are estimated to save the Australian health system $22.72 million annually. (19) A New Zealand study found that a 5% increase in short bicycle trips (less than 7 km) could have annual net health savings of NZ $200 million. (20) Regarding diet, reducing animal product consumption by 30 per cent would lead to a 15 per cent reduction in the burden of ischaemic heart disease. (21) Reductions in red meat consumption in Australia from the (current) average of 100g to 50g per person per day have been predicted to reduce annual emissions from livestock by 13.3 $MtCO_2$-e (about 22 per cent) as well as cutting the incidence of colorectal cancer by 11 per cent. (21) Thus changes to agriculture to discourage excessive consumption of animal products can improve public health and reduce demands and associated costs on the healthcare system. (22)

The monetised health co-benefits of mitigation policies may offset a substantial fraction of the mitigation costs (23), thereby reducing the financial risk of committing to ambitious emissions reduction targets. In addition, climate policies with health co-benefits have the potential to increase worker productivity by lowering the opportunity costs of reduced utilisation of human capital due to illness. (22) A healthy workforce is more productive and gives Australian business a competitive advantage. To this end, AMSA recommends for the review panel to recognise not only that climate mitigation policies can have health co-benefits, but to factor into its formulations the potential financial gains of increased worker productivity and reduced illness from improved air quality, increased active transport, and reduced animal product consumption. These financial gains have the potential to reduce the cost for the Australian government to commit to our aforementioned recommended emissions reduction targets.

Carbon pricing mechanisms enjoy extensive global support, and may offer health benefits in Australia.

Carbon pricing mechanisms, which includes Emissions Trading Schemes, have been endorsed by many of Australia's close trading partners, including China, the Republic of Korea, the European Union and many states in the USA.(24) Carbon pricing mechanisms have the potential to improve human health. For example, Parry et al. (25) concluded that globally, coal is pervasively undercharged, not only for carbon emissions, but also for the health costs of local air pollution. Further analysis by the International Monetary Fund calculated that a price on CO_2 emissions in Australia's national interest would be $11.5 per tonne of CO_2 due to domestic co-benefits alone, particularly health co-benefits from reduced air pollution (leaving aside the global climate benefits). (26)

AMSA acknowledges that there is no single policy measure which can completely prevent dangerous climate change, and therefore recommends employing a range of mitigation techniques in order to meaningfully reduce emissions. An Emissions Trading Scheme is one such policy measure, which should be used in addition to the present Emissions Reduction Fund, or could materialise from an amplification of the Fund's "safeguard mechanism". In either case, AMSA recommends any carbon pricing mechanism should be applied in a way that maximises the health co-benefits of such mechanisms.

Conclusions

AMSA recognises that climate change will produce significant adverse effects on the health of Australians, with subsequent increases in expenditure in the health budget and losses in worker productivity. Climate mitigation policies with health co-benefits have the potential to substantially reduce the cost of transitioning to a low carbon economy, and may aid to improve workforce productivity. Taken together, these two points highlight not only a moral necessity, but also the financial viability on health grounds of committing to ambitious emissions reduction targets inline with our recommendations. An Emissions Trading Scheme should be viewed as an opportunity to realise health co-benefits complementary to emissions reductions, and hence should be adopted by the Federal Government in addition to existing policies.

Thank you for taking our views into consideration and please contact us for any further information or clarification.

1. Costello A, Abbas M, Allen A, Ball S, Bell S, Bellamy R, et al. The Lancet Commissions: Managing the health effects of climate change. Lancet and University College London Institute for Global Health Commission. The Lancet. 2009;373:1693-733.
2. Reisinger AR, Kitching L, Chiew F, Hughes L, Newton PCD, Schuster SS, et al. 2014: Australasia in Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, United Kingdom and New York, NY, USA: 2014.
3. Hughes L, McMichael A. The Critical Decade: Climate Change and Health. Climate Commission Secretariat (Department of Climate Change and Energy Efficiency), 2011.
4. Steffen W, Hunter J, Hughes L. Counting the Costs: Climate Change and Coastal Flooding. Climate Council of Australia Limited, 2014.
5. Adger WN, Pulhin JM, Barnett J, Dabelko GD, Hovelsrud GK, Levy M, et al. 2014: Human security 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. Cambridge, United Kingdom and New York, NY, USA.
6. The Treasury. Intergenerational Report 2015: Australia in 2055. The Treasury, The Australian Government, 2015.
7. Bambrick H, Dear K, Woodruff R, Hanigan I, and McMichael AJ. The Impacts of Climate Change on Three Health Outcomes: Temperature-Related Mortality and Hospitalisations, Salmonellosis and Other Bacterial Gastroenteritis, and Population at Risk From Dengue. Cambridge, UK: Cambridge University Press: 2008.
8. Haines A, McMichael AJ, Smith KR, Roberts I, Woodcock J, Markandya A, et al. Public health benefits of strategies to reduce greenhouse gas emissions: overview and implications for policy-makers, The Lancet, Health and Climate Change Series 1. 2009; 374 (9707): 2104-2114.
9. Armstrong F, Tait P. Health and Energy Choices: Background Briefing Paper. Climate and Health Alliance, Public Health Association of Australia, Australian Nursing and Midwifery Federation, National Toxics Network, Australian Medical Students Association, Women's Health East, and Services for Rural and Remote Allied Health, 2014.
10. Spickett, JT, Brown HL, and Rumchev K. Climate Change and Air Quality: The Potential Impact on Health. Asia Pacific Journal of Public Health 2011; 23: 37S-45S.
11. 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.
12. Climate and Health Alliance, Coal in the Hunter: lessons from one valley for the world, Climate and Health Alliance, 2015.
13. Bureau of Transport and Regional Economics, Department of Transport and Regional Services. BTRE Working Paper 63, Health Impacts of Transport Emissions in Australia: Economic Costs, 2005.
14. Edwards P, Roberts I,'Population Adiposity and Climate Change', International Journal of Epidemiology, 2009;38:1137-1140.
15. London School of Hygiene & Tropical Medicine, Preventing non-communicable diseases through low carbon development, Conference organised by the London School of Hygiene & Tropical Medicine, 12 February 2013.
16. Tilman D, Clark M, 'Global diets link environmental sustainability and human health', Nature, 2014;515:518-522.
17. Begg S, Vos T, Barker B, Stevenson C, Stanley L, and Lopez AD. The burden of disease and injury in Australia, 2003. PHE 82. Canberra: 2007.
18. World Health Organisation, Health in the Green Economy: Co-benefits to health of climate change mitigation – Transport Sector, 2011.
19. Bauman A, Rissel C, Garrard J, Ker I, Speidel R, and Fishman E. Cycling: Getting Australia Moving: Barriers, facilitators and interventions to get more Australians physically active through cycling. Melbourne: Cycling Promotion Fund, 2008.

20. Woodward A, and Lindsay G. Changing modes of travel in New Zealand cities. In P. Howden-Chapman, K. Stuart, and R. Chapman (Eds.), Sizing up the city – Urban form and transport in New Zealand. Wellington, New Zealand: New Zealand Centre for Sustainable Cities centred at University of Otago, 2010.
21. Friel, S. Climate change, food insecurity and chronic diseases: sustainable and healthy policy opportunities for Australia, NSW Public Health Bulletin, 2010; 21(5–6)
22. Climate and Health Alliance, Climate Institute. Our Uncashed Dividend: The health benefits of climate action. Australia. 2012.
23. Intergovernmental Panel in Climate Change (IPCC), Climate Change 2007: Working Group III: Mitigation of Climate Change, Co-benefits of mitigation, 2007. Available at: http://www.ipcc.ch/ publications_and_data/ar4/wg3/en/tssts-ts-11-5-co-benefits-of.html.
24. World Bank News. Last accessed 6th March 2015, available at: http://www.worldbank.org/en/news/feature/2014/09/22/governments-businesses-support-carbon-pricing
25. Parry I, Heine D, Lis E, Li S. Getting Energy Prices Right. International Monetary Fund, 2014.
26. Parry I, Veung C, Heine D. How Much Carbon Pricing is in Countries' Own Interests? The Critical Role of Co-Benefits. International Monetary Fund, 2014.