

# Submission to the Climate Change (National Framework for Adaptation and Mitigation) Bills 2020

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Healthy planet, healthy people

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## Climate Change (National Framework for Adaptation and Mitigation) Bill 2020 and Climate Change (National Framework for Adaptation and Mitigation) (Consequential and Transitional Provisions) Bill 2020

### Introduction

Doctors for the Environment Australia (DEA) is an independent, self-funded, non-government organisation of medical doctors in all Australian States and Territories. Our members work across all specialties in community, hospital and private practice. We work to prevent and address the diseases - local, national and global - caused by damage to our natural environment. We are a public health voice in the sphere of environmental health with a primary focus on the health harms from pollution and climate change.

Doctors for the Environment welcomes the opportunity to provide a submission to the joint public inquiry into the Climate Change Bills (CCB) that have been referred to the House Standing Committee on the Environment and Energy.

This is the first parliamentary inquiry into why Australia should commit and legislate net zero emissions by 2050 and why the legal framework proposed in these Bills will assist the health sector in driving the mitigation, adaptation and resilience planning that is needed.

The World Health Organisation has described climate change as the defining issue for public health in the 21<sup>st</sup> Century and warns that “the severity of impacts of climate change on health are increasingly clear and threatens to undermine the last 50 years of improvements in health.”<sup>1</sup> The direct and indirect effects of climate change (exposure to heatwaves, floods, droughts, bushfires and extreme weather events) are clearly and inextricably linked to the disruption of environmental conditions that provide the basis for our physical and mental health (air quality, clean water, food safety and spread of infectious diseases). Urgent action is needed to reduce emissions to keep global warming at less than 2°C. If we fail to do this, tipping points are likely to be reached after which, further limits on global warming and climate change will be exceedingly difficult to manage, water and food security will be at risk and some areas of Australia will likely be uninhabitable.<sup>2</sup>

Last year most major medical organisations in Australia, and many others around the world declared a *Climate Health Emergency*<sup>3</sup> and have called on governments for strong and effective action to reduce emissions and for recognition, preparation and management of the critical public health challenges ahead.

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<sup>1</sup> WHO (2018). *COP 24 special report: health and climate change*. World Health Organisation <https://www.who.int/globalchange/publications/COP24-report-health-climate-change/en/>

<sup>2</sup> IPCC Special Report: global warming of 1.5°C. 2018 <https://www.ipcc.ch/sr15/chapter/spm/>

<sup>3</sup> <https://climateemergency-notimeforgames.nationbuilder.com/>

Doctors for the Environment and other Australian health organisations have long advocated for a health framework in planning, adaptation and mitigation of climate change risks on human health similar to that in the UK. Already we have experienced a huge toll on physical and mental health through extreme climate-induced events in Australia. The cost of intangible losses which includes impacts on health of the Black Saturday bushfires is estimated to be over \$3.9 billion, with a further \$4.4 billion in insured losses which includes the tragic loss of lives<sup>4 5</sup>. Health costs alone from the 2019-20 summer bushfires were \$2 billion and other costs are yet to be determined, but are likely to exceed those of Black Saturday.<sup>6</sup> These health and economic tolls are a national issue for which there needs to be national acknowledgement of the threats and a clear and ambitious plan for their minimisation.

## Recommendations

1. Australia commits to a net zero emissions target by 2050 in line with Australia's states and territories, many Australian cities and councils, most international parties, and in line with recommendations by the IPCC.
2. Australia re-adjusts its 2030 interim target to recognize the urgency of climate change mitigation.
3. The Australian health sector commits to a sustainability framework to reduce emissions and improve sustainability within the health sector
4. Australia develops a national climate change and health strategy
5. Australia develops comprehensive adaptation and risk management measures to address the current and future health impacts of severe climate and weather events.
6. Australia develops an independent Climate Change Commission
7. Australia continues to develop and expand current technologies (renewables) for energy production which have no health risks and offer zero greenhouse gas emissions at lower costs than fossil-fuels.

## Discussion

In this submission, we are addressing the following issues:

1. Guiding principles
2. Emissions reduction objectives
3. Science under-pinning the urgency for legislation
4. Net-zero emissions target by 2050 with 5-yearly interim targets
5. Healthcare sector sustainability
6. Adaptation and risk management
7. Technology readiness
8. Independent Climate Change Commission

### 1. Guiding Principles

There are several principles which guide the need for strong action on climate change.

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<sup>4</sup> 2009 Victorian Bushfires Royal Commission report. July 2010. <http://royalcommission.vic.gov.au/Commission-Reports/Final-Report.html>

<sup>5</sup> Llewellyn-Jones R, Is the bushfire mental health response adequate? 3 Feb 2020 InSight+ Issue 4 <https://insightplus.mja.com.au/2020/4/is-the-bushfire-mental-health-response-adequate/>

<sup>6</sup> Johnston F et al. Unprecedented health costs of smoke related PM<sub>2.5</sub> from the 2019-20 Australian megafires. Nature Sustainability. 21 Sept 2020. <https://www.nature.com/articles/s41893-020-00610-5>

### *i. Safeguarding health*

- As reflected in the World Health Organization (WHO) position of ‘Health in all Policies’<sup>7</sup>, human health and the environment are inextricably linked. Climate change is now recognized as a key public health issue.<sup>8 9</sup>
- Doctors for the Environment Australia’s policy paper: *Action on Climate Change and Health: Governance and Strategy*<sup>10</sup> details the need for federal leadership and new Commonwealth laws to guide climate change mitigation and adaptation. Such laws would recognise that climate change is a national economic, health and security threat which merits statutory laws to guide implementation and governance.
- This year (2020) has revealed the vulnerability of human health to unprecedented events, namely Australia’s 2019/2020 summer bushfires, smoke events, heatwaves and the global COVID-19 pandemic. Unmitigated climate change is likely to pose unprecedented health risks on a similar scale.<sup>11 12 13</sup>

### *ii. Urgency of Action*

Scientists have been warning leaders of the risks of climate change for decades, but efforts to take meaningful actions have been thwarted by politicisation. Climate conditions in Australia and globally now undeniably confirm the climate science and the need for urgent action.

Observations now reveal that adverse outcomes from global warming are occurring even faster than predicted, indicating that action must be taken urgently. Crucially, climate “tipping points” such as melting of Arctic sea-ice and polar ice shelves, melting of permafrost and destruction of boreal forests will accelerate climate change beyond our capacity to control our future.<sup>14</sup> Some tipping points have already been reached with melting of Arctic permafrost releasing methane and melting of the Arctic icecap which allows greater warming of the Arctic ocean. Melting ice shelves have now added about 25 cm to average sea levels and the increase is accelerating each year. Biodiversity loss is accelerating, and coral reefs

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<sup>7</sup> World Health Organisation. Health in All Policies: Framework for Country Action. June 2013.

<https://www.who.int/healthpromotion/frameworkforcountryaction/en/>

<sup>8</sup> Beggs P, Zhang Y, Bambrik H, Berry H, Linnenluecke M, Trueck S. Beggs P et al. The 2019 report of the *MJA-Lancet* Countdown on health and climate change. The Medical Journal of Australia Vol 211/11. 14 November 2019. <https://www.mja.com.au/journal/2019/211/11/2019-report-mja-lancet-countdown-health-and-climate-change-turbulent-year-mixed>

<sup>9</sup> DEA factsheet: Climate change and health in Australia. March 2016 <https://www.dea.org.au/climate-change-and-health-in-australia-fact-sheets/>

<sup>10</sup> DEA policy document: Action on Climate Change and Health. March 2018 <https://www.dea.org.au/dea-policy-action-on-climate-change-and-health-governance-and-strategy/>

<sup>11</sup> Carleton T et al, Valuing the global mortality consequences of climate change accounting for adaptation costs and benefits. National Bureau of Economic Research Working Paper 27599. July 2020

<https://www.mic.com/p/climate-change-will-kill-more-people-than-all-infectious-diseases-combined-new-study-says-30709933>

<sup>12</sup> Longden T et al, Heat-related mortality: an urgent need to recognise and record. The Lancet Planetary Health. Vol 4/5. May 1 2020 [https://www.thelancet.com/journals/lanph/article/PIIS2542-5196\(20\)30100-5/fulltext](https://www.thelancet.com/journals/lanph/article/PIIS2542-5196(20)30100-5/fulltext)

<sup>13</sup> Australian government Productivity Commission. Mental Health Inquiry report No. 95, Vol2. 30 June 2020 <https://www.pc.gov.au/inquiries/completed/mental-health/report/mental-health-volume2.pdf>

<sup>14</sup> Lenton T, et al. Climate tipping points – too risky to bet against. Nature 27 November 2020. <https://www.nature.com/articles/d41586-019-03595-0>

which underpin the economies of many countries are under serious threat.<sup>15</sup> It is an indictment on the approach of successive Australian governments that major climate change threats to ecological systems in Australia were identified as early as 2002.<sup>16</sup>

### *iii. Multi-disciplinary approach*

Multiple sectors contribute to greenhouse gas emissions. While energy production contributes most, other sectors such as transport (air and maritime as well as land), industry, agriculture and forestry, and energy efficiency in the built environment all contribute significantly. The health sector alone contributes 7% of Australia's emissions. For all these sectors to reduce emissions adequately, clear guidance and development of policies and incentives from government is necessary. The need for action is too vital to be left in the hands of the market which tends to be reactive rather than pro-active.<sup>17</sup>

## 2. Emissions reduction objectives

In 2018, the IPCC determined that to limit global mean temperature increase to 1.5°C, required deep emissions cuts leading to net-zero emissions by 2050.<sup>18</sup>

- Australia's objective is to reduce emissions of all greenhouse gases (GHGs). As well as carbon dioxide (CO<sub>2</sub>), GHGs include methane, nitrous oxide (N<sub>2</sub>O), certain refrigerants and sulphur hexafluoride. The strength of methane (natural gas) as a GHG is not generally appreciated.<sup>19</sup> Methane now contributes nearly 20% of GHG activity and its influence is increasing. Although its atmospheric life of about 20 years is relatively short compared with CO<sub>2</sub>, it is longer than the current critical time-line for emissions reduction. Nitrous oxide, a powerful long-lived greenhouse gas mainly from nitrogenous fertilizers, is also exerting an increasing greenhouse effect.<sup>20</sup>
- The timeline for emissions reduction should be compatible with a meaningful outcome. The current federal government's aim of reaching net zero sometime in the second half of this century does not recognize the degree of urgency required. This is a failure to acknowledge the scientific advice given by experts. Every year that climate action is delayed increases the cost of effective solutions. Had serious climate action begun in 2010, the cuts required to meet the emissions levels for 2°C mean temperature increase would have been around 2% per year on average, up to 2030. Instead, emissions increased and the required cuts from 2020 are close to 3% for 2°C increase, and more than 7% per year on average for 1.5°C increase. In 2010, the world thought it had 30 years to halve global emissions of greenhouse gases. In 2020, we know that this must happen in ten years.<sup>21</sup>

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<sup>15</sup> IPCC Special Report on the Ocean and Cryosphere in a changing climate. 2019 <https://www.ipcc.ch/srocc/chapter/summary-for-policymakers/>

<sup>16</sup> Biological Diversity Advisory Committee. Climate change impacts on biodiversity in Australia. 1-2 October 2002 <https://www.environment.gov.au/system/files/resources/3f374cfd-3eaa-4c56-a2d3-92fd4bee286e/files/greenhouse.pdf>

<sup>17</sup> The Drawdown Review: Climate solutions for a new decade. 2020 <https://drawdown.org/drawdown-review>

<sup>18</sup> IPCC Special Report: global warming of 1.5°C 2018. <https://www.ipcc.ch/sr15/chapter/spm/>

<sup>19</sup> Stanford. Global methane emissions soar to record high. 15 July 2020 <https://phys.org/news/2020-07-global-methane-emissions-soar-high.html>

<sup>20</sup> Tian H, et al. A comprehensive quantification of global N<sub>2</sub>O sources and sinks. Nature 586, 248-256. Oct 2020 <https://www.nature.com/articles/s41586-020-2780-0>

<sup>21</sup> Hohne N et al, Emissions: world has four times the work in one-third of the time. Nature. 4 March 2020. <https://www.nature.com/articles/d41586-020-00571-x>

- Although many reports, scientists and policymakers continue to discuss rises of 2°C, it must be emphasized that, in 2018, the Intergovernmental Panel on Climate Change (IPCC) reported that warming of more than 1.5 °C would be disastrous.<sup>22</sup>

### 3. The science behind the need for legislation

The Australian government's Bureau of Meteorology's (BOM) latest report, *State of the Climate 2020*, draws on the latest climate research, observations, analyses and projections that paint a consistent picture of ongoing, long-term climate change extremes in Australia that "have a large impact on the health and wellbeing of our communities and ecosystems."<sup>23</sup>

Key points from the Report include:

- Australia's climate has warmed on average by  $1.44 \pm 0.24$  °C since national records began in 1910, leading to an increase in the frequency of extreme heat events.
- There has been an increase in extreme fire weather, and in the length of the fire season, across large parts of the country since the 1950s, especially in southern Australia.
- Oceans around Australia are acidifying and have warmed by around 1°C since 1910, contributing to longer and more frequent marine heatwaves.
- Sea levels are rising around Australia, including more frequent extremes, that are increasing the risk of inundation and damage to coastal infrastructure and communities.
- Globally, concentrations of all the major long-lived greenhouse gases in the atmosphere continue to increase, with global annual mean CO<sub>2</sub> concentrations reaching 410 ppm in 2019 and the CO<sub>2</sub> equivalent (CO<sub>2</sub>-e) of all greenhouse gases reaching 508 ppm. These are the highest levels seen on Earth in at least two million years.<sup>24</sup>

### 4. Net Zero Emissions

Legislation is clearly required because Australia has failed to reduce emissions adequately since pledges to the IPCC were first accepted in 1997.

Australia's 26-28% emissions reduction target for 2030 (below 2005 levels) is woefully inadequate, and the government's own projections show we are not on track to even meet that target.<sup>25</sup> Australia's emissions have been steadily increasing since 2013. Progress in emissions reduction has stalled in most sectors and reversed overall.<sup>26</sup>

- All Australian states and territories and many cities and local government precincts have emissions targets of net-zero by 2050 or earlier. Yet there is no similar national target or national co-ordinating effort to give business, industry and state governments support and certainty for investment. Targets are now accepted internationally as a catalyst to achieving emissions reductions.<sup>27</sup>

<sup>22</sup> IPCC Special Report: global warming of 1.5°C 2018. <https://www.ipcc.ch/sr15/chapter/spm/>

<sup>23</sup> Australian Bureau of Meteorology. *State of the Climate 2020* <http://www.bom.gov.au/state-of-the-climate/>

<sup>24</sup> Australian Bureau of Meteorology. *State of the Climate 2020* <http://www.bom.gov.au/state-of-the-climate/>

<sup>25</sup> <http://www.environment.gov.au/system/files/resources/128ae060-ac07-4874-857e-dced2ca22347/files/australias-emissions-projections-2018.pdf>

<sup>26</sup> <https://www.atse.org.au/news-and-events/article/emissions-targets-are-we-on-track/>

<sup>27</sup> Darby M, Gerretsen I. Which Countries have a net zero carbon goal. *Climate Home News* 14 June 2019 <https://www.climatechangenews.com/2019/06/14/countries-net-zero-climate-goal/>

- A technology investment roadmap has been promoted as a means of progressing action. However, without reference to meaningful “targets”, a roadmap is aimless and will not incentivise business, industry, the community or government to pursue the options described in the necessary timeframe.<sup>28</sup>
- Legislation would support the AEMO’s Integrated System Plan which outlines orderly progression to carbon neutrality in power generation.<sup>29</sup>
- Specific targets would provide policy certainty and direction for fossil fuel companies for future markets. Dependence on coal and gas needs to be withdrawn sooner rather than later and most Australians now support an orderly transition from coal.<sup>30</sup> To achieve this transition, extensive planning which brings together government, business, trade unions, civil society, and communities to transform employment is required. Planning also has the potential to deliver more equitable and prosperous growth.<sup>31</sup>
- Five-yearly budgets are necessary to stimulate immediate action and provide on-going guidance in case of changing domestic and international circumstances.
- Legislation would give certainty and direction for industry to step up production of technologies to assist in switching to an electrified economy.
- Investment in new technologies with inappropriately long timelines for research, development and commercialisation will delay emissions reduction until it is too late to be an effective solution, with the added risk of creating costly stranded assets.
- Expansion of the gas industry is inconsistent with net-zero emissions by 2050. Gas is not a cheaper fuel and is not in short supply – it is maldistributed with most being exported.<sup>32 33 34</sup> In order to achieve the emissions reductions required, new reserves of fossil fuels need to be left in the ground.
- Greenhouse gases are emitted from diverse sectors such as transport, agriculture, industry and the built environment. Legislation is needed so that frameworks for emissions reduction in these sectors can be developed and co-ordinated in a timely fashion. Where there are so many factors at play, goals can govern direction which may have to switch dramatically depending on progress.<sup>35</sup>

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<sup>28</sup> DEA submission to Technology Investment Roadmap/ 17 June 2020 <https://www.dea.org.au/wp-content/uploads/2020/09/2020-06-17-Submission-to-Technology-Investment-Road-Map-discussion-paper.pdf>

<sup>29</sup> AEMO – Integrated System Plan for the National Electricity Market. July 2018 [https://www.aemo.com.au/-/media/Files/Electricity/NEM/Planning\\_and\\_Forecasting/ISP/2018/Integrated-System-Plan-2018\\_final.pdf](https://www.aemo.com.au/-/media/Files/Electricity/NEM/Planning_and_Forecasting/ISP/2018/Integrated-System-Plan-2018_final.pdf)

<sup>30</sup> Merzian R, Quicke A, Bennett E, Campbell R, Swann T. Climate of the Nation 2019 research report. The Australia Institute [https://www.tai.org.au/sites/default/files/Climate%20of%20the%20Nation%202019%20%5BWEB%5D\\_0.pdf](https://www.tai.org.au/sites/default/files/Climate%20of%20the%20Nation%202019%20%5BWEB%5D_0.pdf)

<sup>31</sup> New Climate Economy Key Economic Systems report. 2018 [https://newclimateeconomy.report/2018/wp-content/uploads/sites/6/2018/09/NCE\\_2018\\_KEY-ECONOMIC-SYSTEMS.pdf](https://newclimateeconomy.report/2018/wp-content/uploads/sites/6/2018/09/NCE_2018_KEY-ECONOMIC-SYSTEMS.pdf)

<sup>32</sup> The Australia Institute. Gas for export 12 times larger than gas for manufacturing. 16 November 2020 <https://www.tai.org.au/content/gas-export-12-times-larger-gas-manufacturing>

<sup>33</sup> Wood T, Dundas G. Flame out: the future of natural gas. The Grattan Institute. 2020 <https://grattan.edu.au/wp-content/uploads/2020/11/Flame-out-Grattan-report.pdf>

<sup>34</sup> DEA [https://turnoffthegas.good.do/turnoffthegas/Sign\\_our\\_Petition/](https://turnoffthegas.good.do/turnoffthegas/Sign_our_Petition/)

<sup>35</sup> The Drawdown Review: Climate solutions for a new decade. 2020 <https://drawdown.org/drawdown-review>

## 5. Reducing emissions and promoting sustainability within the healthcare sector

The Australian healthcare sector is one of the largest of our economy, with expenditure approaching 10% of GDP.<sup>36</sup> The CO<sub>2</sub> emissions of the sector are also significant, estimated at over 7% of Australia's total CO<sub>2</sub> emissions.<sup>37</sup> There are significant environmental, as well as financial benefits in healthcare playing a role in supporting emissions reduction.

Doctors for the Environment has proposed a national Healthcare Sustainability Unit (HSU) which would assist the Australian health care system (primary, secondary and tertiary) to deliver quality health care in environmentally and financially sustainable ways. An HSU could lead research, policy development, system changes and education of staff, fulfilling a central national co-ordinating role for maximum effectiveness and successful implementation of initiatives at state, regional, health network, hospital and practice levels.<sup>38</sup>

In the UK, the National Health Service (NHS) has committed to reaching net zero emissions for its carbon footprint by 2040, with an ambition for an interim 80% reduction by 2028-2032.<sup>39</sup> The NHS achieved an 11% reduction in GHG emissions between 2007 and 2015 while the level of health care activity rose by 18%. By 2017, the associated financial savings associated with environmental sustainability (mainly energy, waste and water) rose to £90 million annually.<sup>40</sup>

In the US, one study showed that hospital programs to reduce energy use and waste and improve efficiencies could save over \$5.4b over five years and \$15b over ten years.<sup>41</sup>

## 6. Adaptation and risk management of adverse health impacts of severe weather events

Currently, the Minister for Health and the Department of Health have little input or authority to address the risks and management of current and future health impacts arising from climate change. Mitigation of climate change is currently accepted at the federal level as the responsibility of the Department of the Environment and Energy. This is indicative of the government's lack of recognition of the vital links between the environment and human health and the disconnect between environmental policies that negatively impact the health of Australians.

Australia is poorly prepared to manage the health impacts of climate change leading to vulnerability of both public health and health services. Doctors for the Environment calls on government to accept responsibility for ensuring co-ordination and consistency of adaptation measures which impact health across the nation, with appropriate standards, research and funding to ensure compliance by state and

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<sup>36</sup> Australian Institute of Health and Welfare. Health Expenditure Australia 2011-2012. Health and Welfare Expenditure Series, No. 50. 2012 <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129544656>

<sup>37</sup> Malik A, Lenzen M, McAlister S, McGain F. The carbon footprint of Australian health care. *The Lancet Planetary Health* 2018; 2(1): e27-e35 [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(17\)30180-8/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(17)30180-8/fulltext)

<sup>38</sup> DEA Australian Healthcare Sustainability Unit Proposal. 2019 <https://www.dea.org.au/wp-content/uploads/2019/01/DEA-HSU-Proposal---Final-01-19.pdf>

<sup>39</sup> British National Health Service. A Net Zero NHS <https://www.england.nhs.uk/greenernhs/a-net-zero-nhs/>

<sup>40</sup> Pencheon D. Developing a sustainable health care system: the United Kingdom experience. *The Medical Journal of Australia* 2018; 208(7): 284-5. <https://www.mja.com.au/journal/2018/208/7/developing-sustainable-health-care-system-united-kingdom-experience>

<sup>41</sup> Kaplan S, Sadler B, Little K, Franz C, Orris P. Can Sustainable hospitals help bend the health care curve. *Issue Brief*. 29:1-14. November 2012 <https://pubmed.ncbi.nlm.nih.gov/23214181/>

territory authorities. These measures must be accompanied by efforts to develop and deliver robust climate change mitigation policies.<sup>42 43</sup>

Any discussion on health and natural disasters must acknowledge that climate change is an underlying driver of extreme weather and is a national economic, health and security threat which merits statutory action. Bushfires, smoke events, heatwaves and drought are often treated as individual issues, when in fact they are interrelated, and all impacted by our changing climate. Australia needs a comprehensive national assessment of risks to human health from climate change, such as those of the United Kingdom<sup>44</sup> and the United States<sup>45</sup>, and national spending on climate change health research, which has so far been miniscule. An evidence base is essential to drive a national climate change and health strategy to protect the health of Australians.<sup>46</sup>

The report of the Royal Commission into National Natural Disaster Arrangements (2020)<sup>47</sup> noted that natural hazards in Australia have increased and intensified due to climate change.

*“The 2019-2020 bushfire season demonstrated that bushfire behaviour is becoming more extreme and less predictable. Catastrophic fire conditions may become more common, rendering traditional bushfire prediction models and firefighting techniques less effective.”*

*“To properly manage natural disasters of national scale and consequence, it is no longer suitable or appropriate to assess disaster risk at an individual hazard level. We must assess the risk of multiple hazard events occurring concurrently or consecutively. We must look for opportunities to reduce the exposure of communities to natural hazard events and increase the capacity of communities to prepare for and recover from their impacts.”*

In other words, adapting to natural disasters will become more complex and undoubtedly more expensive unless climate change is mitigated by reducing GHGs. Ambitious reduction can only be achieved by a major co-ordinated and targeted approach at a national level.

Major Australian health organisations, including DEA, have long advocated for a national health and climate change strategy. For example:

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<sup>42</sup> DEA climate change adaptation policy. January 2017 <https://www.dea.org.au/wp-content/uploads/2017/07/DEA-adaptation-policy-24-01-17.pdf>

<sup>43</sup> DEA discussion paper <https://www.dea.org.au/wp-content/uploads/2017/07/DEA-Discussion-Paper-Federal-Government-Adaptation-Revised-24-01-17.pdf>

<sup>44</sup> Gov.UK Climate change: health effects in the UK. September 2012 <https://www.gov.uk/government/publications/climate-change-health-effects-in-the-uk>

<sup>45</sup> Impacts of climate change on human health in the US. 2016 National Institute of Environmental Health Sciences <https://www.niehs.nih.gov/health/topics/agents/climate-change/index.cfm>

<sup>46</sup> Carey M, Monaghan M, Stanley F. Extreme heat threatens the health of Australians Medical Journal of Australia 207(6) 18 September 2017 <https://www.mja.com.au/journal/2017/207/6/extreme-heat-threatens-health-australians>

<sup>47</sup> Australian Government Royal Commission into Natural Disaster Arrangements. October 2020 <https://naturaldisaster.royalcommission.gov.au/>

- Doctors for the Environment’s policy paper: *Action on Climate Change and Health: Governance and Strategy* details the need for federal leadership and new Commonwealth laws to guide climate change mitigation and adaptation.<sup>48 49</sup>
- The Climate and Health Alliance (CAHA) has developed a *Framework for a National Strategy on Climate Health and Well-Being*.<sup>50</sup>
- The Australian Medical Association (AMA) called for a *National Strategy for Health and Climate Change* in 2008 and revised in 2015.<sup>51</sup>
- *The 2019 report of the MJA-Lancet Countdown on health and climate change*,<sup>52</sup> concludes that Australia remains at significant risk of declines in health due to climate change, and that substantial and sustained national action is urgently required in order to prevent this.
- The Royal Australian College of General Practitioners (RACGP) has a position paper on *Climate Change and Human Health*,<sup>53</sup> that recognises climate change as a key public health issue.

## 7. Technology readiness assessment

Assessments by AEMO<sup>54</sup>, ClimateWorks<sup>55</sup> and others<sup>56</sup> have revealed that Australia can produce sufficient renewable energy backed up by storage and interconnections to dispense with the majority of fossil-fuel use. In addition, technology is rapidly emerging for emissions reduction in the other sectors of transport, industry, agriculture and the built environment.

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<sup>48</sup> DEA policy document on climate change and health. March 2018 <https://www.dea.org.au/dea-policy-action-on-climate-change-and-health-governance-and-strategy/>

<sup>49</sup> DEA discussion paper <https://www.dea.org.au/wp-content/uploads/2017/07/DEA-Discussion-Paper-Federal-Government-Adaptation-Revised-24-01-17.pdf>

<sup>50</sup> Climate and Health Alliance National Strategy for climate health and well-being. June 2017 <https://www.caha.org.au/national-strategy-climate-health-wellbeing/>

<sup>51</sup> AMA position statement on climate change and human health. August 2015 <https://ama.com.au/position-statement/ama-position-statement-climate-change-and-human-health-2004-revised-2015>

<sup>52</sup> Beggs P, Zhang Y, Bambrik H, Berry H, Linnenluecke M, Trueck S. Beggs P et al, The 2019 report of the *MJA-Lancet Countdown on health and climate change*. The Medical Journal of Australia Vol 211/11. 14 November 2019. <https://www.mja.com.au/journal/2019/211/11/2019-report-mja-lancet-countdown-health-and-climate-change-turbulent-year-mixed>

<sup>53</sup> RACGP position statement: the impact of climate change on human health. June 2019 <https://www.racgp.org.au/advocacy/position-statements/view-all-position-statements/clinical-and-practice-management/the-impact-of-climate-change-on-human-health>

<sup>54</sup> AEMO – Integrated System Plan for the National Electricity Market. July 2018 [https://www.aemo.com.au/-/media/Files/Electricity/NEM/Planning\\_and\\_Forecasting/ISP/2018/Integrated-System-Plan-2018\\_final.pdf](https://www.aemo.com.au/-/media/Files/Electricity/NEM/Planning_and_Forecasting/ISP/2018/Integrated-System-Plan-2018_final.pdf)

<sup>55</sup> ClimateWorks Pathways to deep decarbonisation in 2050. September 2014 <https://www.climateworksaustralia.org/resource/pathways-to-deep-decarbonisation-in-2050-how-australia-can-prosper-in-a-low-carbon-world/>

<sup>56</sup> Project Drawdown: Table of Solutions <https://drawdown.org/solutions>

Concentration on wind and solar power generation does not mean that other sources of power should be neglected. However, wind and solar are now cheaper than other sources and costs are likely to decrease further. Other technologies to assist in availability of dispatchable power and conversion to transportable forms are being developed to assist in the transition from fossil-fuels. Green hydrogen is a strong candidate to build Australia's capacity as a global leader in clean energy exports. ARENA and the CEFC have provided opportunities for the development of renewable technologies and will require continued funding.

## 8. Restoration of an Independent Climate Change Commission

In 2013, the Climate Commission was abolished by the federal government and although there is a Climate Change Authority to advise government, there is no mechanism for this advice to be accepted. A new Climate Change Commission with stronger powers would assist the government in achieving ambitious climate action targets. Government would be mandated to accept advice and if rejected, would need to give reasons, making it more difficult for rejection on partisan grounds. Politicisation of climate change and intrusion by vested interests has delayed effective action for more than two decades and must give way to science.