Submission on Climate Health WA Inquiry

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Healthy planet, healthy people.

Government of Western Australia, Department of Health, Improving Health in WA, Climate Health WA Inquiry.[1]

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 practices. We advocate 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.

Introduction

DEA commends the WA Government on undertaking the Climate Health WA Inquiry. The impacts of climate change on the health of our community are an urgent issue that needs addressing by government with both attention and resources. We note the inquiry is timely with the WA Government, via the Department of Water and Environment Regulation, also developing a WA policy on climate change, and the Environmental Protection Agency reviewing greenhouse gas guidelines. Given the primary importance of the health and well-being of Western Australians, we anticipate the proceedings and findings of the inquiry to also inform these other processes.

Our key recommendations are:

1. The WA Department of Health (DoH) and the health sector in general lead a *visible public* process to draw the link between the climate crisis and health and articulate the need for immediate emissions reduction.

2. The DoH establish and resource a Sustainable Development Unit based on the UK's model of the same, as per the final recommendations of the Sustainable Health Review.

3. The DoH lead and coordinate a comprehensive adaptation process to prepare WA communities for climate health impacts.

4. The DoH with consideration of the health impacts have a regulatory role in setting WA emissions reduction targets and regulating high emitting industries.

5. The DoH call for a renewable energy target that will allow for a planned transition and a net-zero emissions target by at least 2050 with an interim target of at least 60% on 2005 levels by 2030, in line with the science.

6. The DoH set a mandatory target for all health services to have net-zero emissions by at least 2050 with an interim target of at least 60% on 2005 levels by 2030, in line with the science.

7. Consistent with the science and the need to rapidly reduce emissions, DoH advocate for no further major fossil fuel developments in Western Australia.

Background on Climate Change

Climate change is the greatest health challenge of the 21st century and threatens to undermine all aspects of the society in which we live. The impacts to human health are becoming increasingly clear and threaten to undo over half a century of work in global health[2].

The primary driver of climate change is the increase in greenhouse gas production due to the burning of fossil fuels for power generation, and from emissions from the transport, mining and agricultural sectors. Deforestation and land degradation through agriculture and pests have also destroyed and continue to destroy valuable "carbon sinks".

There has already been a 1°C rise in global average temperature since pre-industrial levels and we are seeing increasing severity and frequency of many extreme weather events along with the polar ice sheets on Greenland and Antarctica melting at increasing rates[3].

Current policy and pledge trajectories, which will limit warming by the end of the century to around 3.2°C, lie well above emissions pathways consistent with the Paris Agreement long-term temperature goal[2] and there remains a substantial gap between governments' promises and the total level of actions undertaken to date.

Inaction by governments to rein in emissions along timelines commensurate with the science is in direct contravention of government commitment to progress the realisation of the human right to health for all[4].

The public health community has rapidly increased its engagement on climate change and health in recent years, providing better understanding

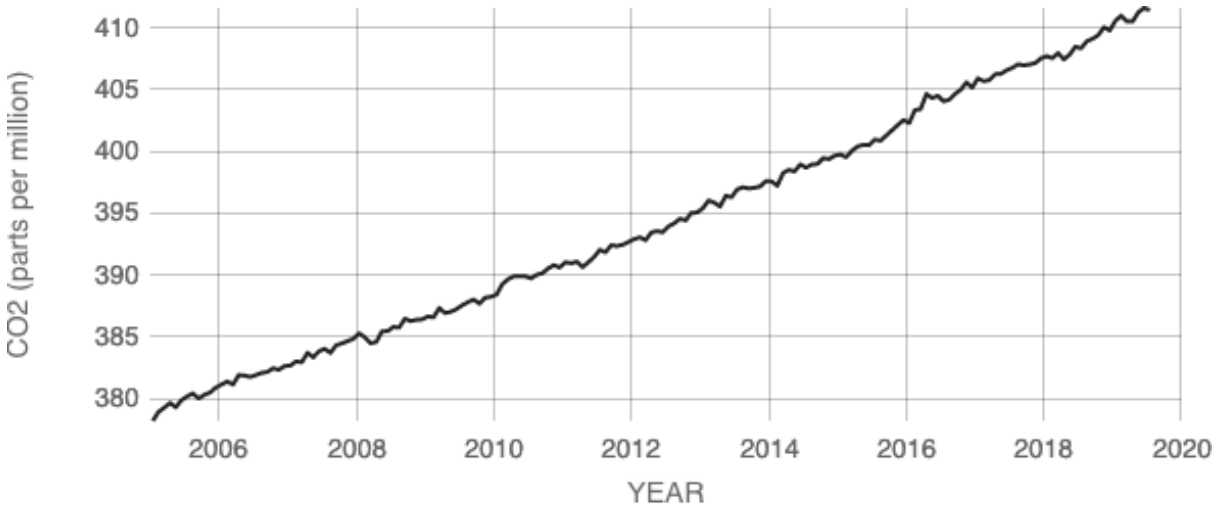
of the links between climate change and health and raising awareness of the significant health threats[2].

As the drivers of climate change – principally fossil fuel combustion – pose a heavy burden of disease, including a major contribution to the 7 million deaths globally from outdoor and indoor air pollution annually[5], mitigating climate change could save over a million lives whilst also enabling many other health benefits[6].

The Intergovernmental Panel on Climate Change (IPCC) has embedded within the Paris Agreement the Sustainable Developments Goals and as such, it is potentially the strongest global health agreement of the century. **There is a strong compelling case therefore for the health profession to be leading in advocacy on this issue.**

The urgency is increasing

A strong and clear scientific consensus opines that there is already too much CO_2 in the atmosphere. The world is now approaching atmospheric concentrations of 415ppm CO_2[7] which will make keeping within the IPCC recommended 1.5°C of warming almost impossible[8].



Source: climate.nasa.gov

The grave threat posed by further warming has been clearly articulated in the IPCC special report on the impacts of global warming of 1.5°C[9]. From a health perspective, the most recent COP24 Special Report on Climate Change and Health highlights the severity of the predicted impacts of climate change to health calling it the greatest threat to the 21st century[2].

Any considerations of greenhouse gas (GHG) emissions need to pay close attention to the state of the climate and resulting planetary stability. In the latest report of the IPCC (2018)[9], scientists from around the world

concluded that in order to maintain a world somewhat similar to today, our carbon emissions must be in steep decline within 12 years (now 10.5 years).

However, recent events such as heatwaves in the Arctic[10] with accelerated permafrost melting[11] and fires in the Amazon[12] will result in feedback loops that are going to significantly reduce our existing carbon budget[3].

In an interview with NASA when asked to comment about the unprecedented melting of the Greenland ice sheets[13] in August 2019, one of the world's leading climate scientists and current director of the Earth System Science Center at Pennsylvania State University, Professor Michael Mann stated:

"We are 50 to 100 years ahead of schedule …, the more observations we get, the more sophisticated our models become, the more we are learning that things can happen faster and with greater magnitude than we predicted just years before".

Scientists will now be reworking their models to take into consideration the acceleration of melting and the extremely warm temperatures driving it. No doubt there will be a re-evaluation of how much carbon can be emitted by humans – shortening our response timeframe – and demanding extreme action to reduce global use of coal, gas and oil.

Climate-related litigation

This year The Lancet outlined the crucial role of law as providing the legal determinants to health, especially at a time of increased globalisation[14].

Despite weak legal structures currently to prevent climate related impacts from occurring, worldwide including Australia there has been a rise in climate-related litigations[15]. Just this month, the Reserve Bank of Australia has repeated calls for companies to incorporate climate change into their business plans, stating that climate change poses a material long term risk to the global economy and to financial markets[16].

As attributional science concerning climate change and extreme weather events continues to progress, it is now easier to say with confidence that a certain weather event would not have been possible if not for climate change[17]. What follows in litigation is an allocation of liability.

Law firm Corrs Chambers and Wesgarth outline that the first wave of climate change litigation in Australia focussed on approvals for developments of fossil-fuel projects. The Rocky Hill coal decision in which the judge cited the mine's likely contribution to climate change as a key reason for refusal of the project, is a case in point and is likely to have far reaching consequences[18].

However, the next wave will likely include challenges to corporate decision-making and disclosures; litigation against companies responsible for significant emissions; and suing governments for failing to take steps to mitigate climate change[19].

A legal report prepared for The Centre for Policy Development this year concluded that public authority directors likely have duties of care and diligence to consider climate risk in their activities similar to those of their private sector counterparts[20].

As the frequency of climate-related health impacts increases, so too will the litigation risk and the pressure to demonstrate good climate governance.

Climate change in Western Australia

The state is uniquely susceptible to climate impacts[21]. Already rainfall patterns in Western Australia have changed over the last 40 years with a marked drying trend in the south-west of the state. There has been a steady decline in rainfall in the south-west since the 1970s which has resulted in a 50 per cent reduction in streamflow and approximately 60 per cent reduction of inflow to metropolitan dams since the 1970s. This has had serious implications for urban water supplies and agriculture.

Fire risk, fire weather and the length of fire seasons have increased since the 1970s and the mean sea level at Fremantle has increased almost 20 cm since 1897, at an average rate of 1.54 millimetres each year. Since 1991, sea level on the west coast has raised at a rate almost three times the global average. This has contributed to a three-fold increase in flooding events in Fremantle.

Large scale disruption to terrestrial and marine ecosystems concurrently through a massive heatwave in 2011 has been recently documented highlighting the vulnerability of the state to rising temperatures[22]. With predictions of further warming, increase in duration and frequency of heatwaves and diminishing rainfall in parts of the state (see below), more of such disruptions are likely to occur and escalate.

A more recent report[23] shows that Shark Bay, one of 49 marine World Heritage Sites globally, is especially vulnerable to future climate change, given that the temperate seagrass that supports the entire ecosystem is already living at the upper edge of its tolerable temperature range. These seagrasses provide vital habitat for fish and marine mammals and help the stromatolites survive by regulating the water salinity.

Major impacts to our ecosystems should not be taken lightly. Of the four interlinked fundamental supports of human life – air, water, productive land and biodiversity – climate change is partnered by a loss of biodiversity and its associated ecological services. Climate change is the main factor destroying biodiversity and this destruction reinforces climate change[24].

WA climate projections

Based on findings from the Indian Ocean Climate Initiative Western Australia Stage 3 and recent analyses by CSIRO and the Bureau of Meteorology[25], West Australian climate projections are that average annual temperature will increase by 1.1–2.7°C in a medium-emission scenario and 2.6–5.1°C in a high-emission scenario by the end of the century.

Rainfall in the south-west is projected to decline by 6% by 2030 and 12% by 2100 (median values) for a medium-emission scenario, and by 5% and 18%, respectively (median values) for a high-emission scenario.

Temperature extremes are projected to increase in line with mean temperatures and the intensity of hot spells projected to increase over most of WA.

The number of dry days is likely to increase over all of WA. Agricultural drought months (defined as a month of extremely low soil moisture) are projected to increase by up to 20% over most of Australia by 2030 and up to 80% in the south-west by 2070.

A new study provides the most thorough examination of changes to future Australia bushfire conditions to date. Using a multi-model approach to project future bush fire conditions based on increasing greenhouse gas emissions (high emission scenario – RCP8.5), this study shows a clear trend towards more dangerous conditions for bushfires throughout Australia into the future (based on near-surface weather conditions)[26].

The IPCC puts sea level rise projections for Australia somewhere between 50 to 90 centimetres by 2090[27], relative to the average sea level measured between 1986 to 2005. But the emerging science indicates this may now be an underestimate[28]. In the United States, National Oceanic and Atmospheric Administration (NOAA) has recommended that global mean sea level rise of up to 2.7 metres this century should be considered in planning for coastal infrastructure[29].

Watts et al[30] highlight the fact that given the inter-related nature of climate impacts with complex interactions, non-linearities and uncertain thresholds and the possibility of large-scale disruption not included in

climate modelling, there is the real prospect of an underestimate of impacts and a real possibility that the reality could be much worse.

"Indeed, on the basis of current emission trajectories, temperature rises in the next eighty-five years may be incompatible with an organised global community"[31] and well beyond the realms of adaptation.

Given the uncertainties, but with the real prospect of an underestimate, the precautionary principle should be applied in all considerations.

Current and future impacts and risks to health from climate change

In 2009, climate change was first described by the world-leading medical journal, the Lancet, as the biggest global health threat of the twenty first century[32]. The most recent COP24 Special Report on Climate Change and Health[2] again reiterated this position.

We refer to the Background Paper[33] sent to participants of the Climate and Sustainability Forum for further general details on health impacts of climate change, but wish to highlight the below:

"Direct effects on health include increasing injury, physical and mental illness, and death related to a greater frequency of more intense weather events (floods, droughts, hurricanes and storms), as well as the effects of increasing temperatures and heatwaves. Extreme weather events can lead to both increased pressure on healthcare services and facilities, and damage to those facilities.

Indirect health effects include those mediated via changes in environmental systems, causing alterations in the distribution of vector-, water-and food-borne infectious diseases, air pollution patterns, and the availability of safe drinking water and adequate nutrition. Further health impacts relate to changes in economic and social systems, including as people migrate or conflict over scarce resources.

Climate change health impacts vary based on the vulnerability and adaptive capacity of individuals and populations. Well recognised vulnerable groups include women and children, the elderly, those with pre-existing medical conditions, those living in rural and remote areas, those in outdoor occupations, and poor and marginalized communities..."

Climate change is an issue of intergenerational and international injustice – future generations will suffer worse health impacts, and poorer countries are already suffering greater impacts despite being the least responsible for emissions.

Impacts and risks to health in Australia

In the Australian setting, we wish to draw the inquiry's attention to a recent review in The MJA-Lancet Countdown on Health and Climate Change: Australian Policy Inaction Threatens Lives[34] finding that the country is vulnerable to the impacts of climate change on health, that policy inaction in this regard threatens Australian lives and that in many ways we have gone backwards and now lag behind other high-income countries such as Germany and the United Kingdom. Of particular concern is that "despite difficulties with data availability and attribution, it is evident that Australians face non-trivial exposure to known climate change-related health risk factors. Since 2000, our biggest cities have warmed considerably, and we now have additional annual heatwave days. Climate change threatens to exacerbate existing food insecurity and malnutrition in Australia."

The Australian Business Roundtable for Disaster Resilience and Safer Communities report on The Economic Cost of the Social Impact of Natural Disasters identifies direct and indirect risks and costs to health from such disasters. The report found tangible costs of natural disasters/extreme weather events include damage to properties, infrastructure, health costs, crop losses and decreased productivity. Intangible costs are more difficult to measure but include loss of health and well-being in affected communities, and an increase in mental health issues, substance abuse, chronic and non-communicable diseases, and unemployment.

The Roundtable report states that, in 2015, the social costs of natural disasters in Australia were at least equal to the physical costs at a total of over $9 billion. The total cost of disasters is expected to rise to an average of $33 billion per year by 2050 unless steps are taken to increase resilience and address mitigation[35].

The 2009 Black Saturday bushfires in Victoria killed 173 people and injured a further 414. The Roundtable report states that the estimated intangible costs of this disaster were significantly higher than the tangible costs, at $3.9 billion and $3.1 billion, respectively. In addition, the deaths of 374 vulnerable people could be attributed to the associated heatwave[36].

The Queensland floods of 2010-2011 resulted in more than 78% of the state being declared a disaster zone, with 35 people killed and approximately 2.5 million otherwise affected[37]. According to the Roundtable report, the tangible asset loss was $6.7 billion and was exceeded by intangible losses of $7.4 billion. Mental health related costs accounted for $5.9 billion.

Impacts and risks to health in WA

Direct effects

From the Climate and Sustainability Forum Working Group Report in 2018:

"It is recognised the health effects of climate change are already being felt in WA. However, there is little data or documented understanding of either how these impacts are or will be experienced (and when) or the costs (both financial and non-financial) within and external to the health system. Extreme weather events are causing heat-related illness, likely contributing to infectious disease incidents (water, food and vector borne diseases) and have presented threats to critical infrastructure. Bushfires and droughts have likely presented increased demand for physical and mental health services. Local councils and residents are already dealing with the effects of sea level rise on infrastructure, and homes, and natural and built coastal assets."

To give some context to the range and magnitude of potential problems, rising sea levels especially using high end projections, would pose a real risk to coastal flooding and erosion for many areas of WA. WA has more than 20,000 km of coastline, and most of the population lives close to the coast. The risk of coastal flooding events trebles every 0.1m of sea-level rise.

The Climate Council estimates[38] for Fremantle that a one-in-a-100-year event would in 2100 (presuming no action to reduce emissions) happen every month or so. Valued infrastructure, homes and livelihoods are at risk due to major storm events and the global rise of sea levels. Mental health impacts are likely to result as people are forced to move inland, suffering financial impact and affecting connection to place and a way of life.

The WA Government recently announced a coastal erosion report[39]. It details 55 locations across the state – 15 metropolitan and 40 regional – that have varying levels of risk, with an additional 31 locations being placed on a watch-list for future monitoring. The Premier also reportedly said that the cost of nullifying coastal erosion at these at-risk sites would be about $110 million across the next five years.

The City of Rockingham is currently developing a Coastal Hazard Risk Management and Adaption Plan[40], in recognition that "much of the city's coastline is potentially vulnerable to coastal hazards".

Flooding of the Swan River is also predicted to occur (due both to sea-level rise and more summer storms upstream) with implications for road infrastructure including the Kwinana Freeway[41].

Flood events can have huge social and health impacts as the Queensland floods of 2010-11 have demonstrated.

Other health effects from floods relate to water and food borne disease, decreased water quality, injury and skin infection. The Queensland floods earlier this year highlighted this issue with at least 10 reported cases of Melioidosis[42].

The March 2019 floods in the Pilbara[43] resulted in some evacuations, power outages, roads blocked and looting, and the 2018 flooding in Broome[44] was unprecedented, isolating an area twice the size of Victoria, and cutting off the main highway connecting Broome to the rest of Western Australia. This resulted in fresh food supplies running low and people from Derby unable to access flights to Perth.

Regarding heatwaves, existing studies in Perth appear to show between a 4-18% increase in emergency department presentations during heatwaves[45], depending on the severity of the heatwave. Some populations are more vulnerable and therefore present more often; the young, old, and individuals of a low socio-economic background[46].

The IPCC's 5th Assessment Report predicts Western Australia to have the most person-days above 40°C of any state, with more than 130 million person-days and many areas of the state having between 130-192 days above 40°C by 2100 under a high emissions scenario[47].

The mortality effect of heat is well recognised in the literature. The extent to which heat will impact mortality and morbidity in WA in the future is uncertain because climate modelling is uncertain, it is unknown how much emissions will decrease, and the adaptive capacity of populations is variable. However, in a worst-case scenario, intense and prolonged heat could affect a large portion of the WA population via direct exposure to heat, or via other system failure.

Direct exposure to heat would be an issue particularly for outdoor workers, elderly, those with pre-existing illness, populations unable to afford or access air conditioning, Aboriginal people and children and young babies, and could result in mortality or morbidity.

The impacts of bushfires can be devastating and protracted. The Yarloop bushfire of 2016 killed 2 people, destroyed 181 homes and buildings and scorched over 70,000 hectares of land. Almost 2 years on there are reports of the community still suffering psychologically[48]. Experience from the Black Saturday fires of 2009 detail ongoing psychological impacts[49] in survivors 5 years later with intangible costs amounting to $3.9 billion[50].

The increase in frequency and intensity of bushfires, heatwaves, major flood events and droughts have the potential of creating compounding and major effects, while the thunderstorm asthma event in Melbourne (10

deaths and 8,000 additional emergency department presentations) highlights the potential for 'unknown unknowns."

Indirect health effects

A range of indirect effects may eventuate in WA across a range of sectors and impacts.

1. Agriculture, biodiversity and food supply

Climate change will also affect the productivity of crops and livestock in WA through higher temperatures, changes in the amount, intensity and distribution of rainfall, and more frequent dry periods.

The Department of Primary Industries and Regional Development state on their Climate Ready Agriculture web-page that this could be compounded by policy-related economic pressures including rights to water and energy prices; social pressures related to liveability of regional communities and health and safety concerns will increase as temperatures increase, particularly in areas where water availability declines[51].

In addition, increasing aquifer demands in coastal regions is generating salt water intrusion[52], which may have additional impacts for agricultural productivity, leading to reduced food yields and associated health effects; while potential salination of coastal wetlands may have indirect health effects, via influencing mosquito vectors or other as yet unrecognised health effects due to changes in biodiversity.

We have previously highlighted the occurrence recently of large-scale disruption to ecosystems from heatwaves with the potential for significant biodiversity loss. Biodiversity underpins the many ecological services that are necessary for food production. Two recent international reports[53, 54] outline the current challenges to agriculture from biodiversity loss including that from climate change.

2. Water supply and water security

Declining rainfall in the south-west and inflows to dams has had a profound impact to our water supplies with a far greater reliance on groundwater resources and desalination to supply potable water in Perth. The complexity of the topic which would have to cover both potable and non-potable water and regional considerations is beyond the scope of this submission but is included to be noted as of critical importance in the context of a further drying conditions with climate change.

3. Critical infrastructure

We point to the risks to critical infrastructure posed by climate change as alerted in the National Climate Change Adaptation Research Facility's "Climate proofing Australia's infrastructure" Policy Guidance Brief 7[55] and the concern for the combination of interacting physical processes across multiple spatial and temporal scales when floods, bushfires, heatwaves or droughts occur resulting in compound events with magnified impacts as infrastructure is impacted.

4. Mental Health

Predicted drought trends for WA with up to a 70% increase in drought months by 2070 will almost certainly impact on the mental health of farmers. Drought impacts on farmers in NSW from 2007-2013[56] highlight the importance of the issue and the need to prepare and adapt.

An expanding body of research literature describes the links between climate change and mental health and a detailed summary can found in DEA's submission to Victoria Royal Commission into Victoria's Mental Health System[57].

Health inequity/Vulnerable groups

In Australia, despite being a high-income country, problems found in low and middle-income countries who are much more vulnerable to the effects of climate change, are applicable to Aboriginal and Torres Strait Islander communities, especially in tropical Australia.

Parise, in the Australian Journal of General Practice[58], outlines factors that contribute to their vulnerability: inadequate housing; habitation in areas with vectors; decreased purchasing power; inadequate health and energy infrastructure; decreased water security; and lack of food security that contributes to an already elevated level of chronic illness.

He goes on to state that climate change "will increasingly affect the health of Aboriginal and Torres Strait Islander communities and, along with historical and socioeconomic determinants, multiply the challenges to closing the Aboriginal and Torres Strait Islander health gap".

More information can be found in NCCARF's Indigenous Climate Change Adaptation in the Kimberley region of North-western Australia Final Report which details the disproportionate effect of climate change on Indigenous Australians in the remote north of WA, including heat waves, weather events and vector borne disease, and the ability of communities to adapt[59].

There is also a concern for those economically and socially disadvantaged, further widening the gap between them and more advantaged population groups. A deeper understanding of the relationship between climate change impact and social disadvantage is described in NCCARF's Impact of Climate Change on Disadvantaged Groups: Issues and Interventions 2013[60].

Drivers of climate change in Australia

Australia's contribution to the global carbon footprint is significant. As the world's largest exporter of thermal coal, the country will also soon be the largest exporter of natural gas (LNG)[61]. Furthermore, when emissions from Australia's current coal, oil and gas exports (3.6% of global total) are added to domestic emissions (1.4% of global total), Australia's contribution to the global climate pollution footprint is already about 5%. Climate science group, Climate Analytics, calculate that if current developments in NT, WA, Queensland and NSW progress, this could increase to 12 to 17% by 2030[62]. On a per capita basis for emissions, we would certainly lead the world as the heaviest emitter should these projects be allowed to proceed.

Domestically, our GHG emissions continue to rise[63], driven significantly by the gas sector. As a signatory to the Paris Agreement, Australia has a commitment to reduce emissions by 26-28 per cent on 2005 levels by 2030 and to make all reasonable efforts to reduce and eliminate GHG emissions and to fully decarbonise by 2050. Given our rising domestic emissions there has been a clear failure federally to address this issue and we are not on track to meet our Paris targets[64].

The magnitude of the total GHG emissions from Australia and particularly the gas sector of which WA is a major player, clearly is a significant contributor to accelerating climate change and poses a substantial risk to the world's ability to meet targets set under the Paris Agreement.

West Australia's carbon emissions

WA is the only state in Australia without a climate change policy or net-zero emissions target. While all other states' emissions are falling, WA's have risen by 23% since 2005[65].

The domestic emissions expected from all conventional gas reserves are about 40-75% above what Western Australia's whole energy sector could emit in order to comply with the Paris Agreement; considering just the Canning Basin which has been left open to mining, the carbon footprint of this resource alone is equivalent to about double what Australia is allowed to emit in order to comply with the Paris Agreement[66].

Woodside currently has proposals to develop a further two major gas projects, the Browse and Scarborough projects. Such developments would have a major effect to increase WA's emissions further and are incompatible with the rapid reduction in emissions needed globally.

Gas is not clean or green

The development of gas in WA has further significance with respect to climate change. Gas often touted as a transition fuel is still a fossil fuel with significant emissions especially when considering whole of life-cycle emissions[67].

Within the carbon budget, reduction in methane (natural gas) fugitive emissions are particularly urgent and necessary. Because methane has over 80 times the climate forcing capacity of CO_2 over 20 years[68], drastic methane reductions represent the biggest opportunity to buy additional time to achieve sufficient reduction in the longer acting CO_2 emissions.

The IPCC 2019 report demonstrates the dual need for sharp and progressive reductions in methane as soon as possible, as CO_2 reductions alone will not enable limitation of global temperature rises of 1.5°C (and not likely 2°C). The report demands urgent and deep reductions in emissions from short-lived climate pollutants such as methane, tropospheric ozone and black carbon (also from fossil fuels).

Recommendations on how the health sector and the WA Government should respond

The health sector and the WA Government have an opportunity and responsibility to respond to the health risks of climate change. This includes both adapting to unavoidable impacts and making a fair contribution to reducing greenhouse gas emissions.

As noted in the Sustainable Health Review, "only 16 per cent of a person's overall health and well-being relates to clinical care and the role of health ministers and leaders is increasingly requiring them to address issues out of their direct control. This includes housing, social care, isolation and other areas imperative to improving overall health and well-being outcomes and minimising rising costs."

Answers or solutions will more and more be situated outside of "health" and involve partnerships and meaningful collaborations across sectors. Likewise, to respond to rising emissions and climate change will involve stepping outside of our siloes implying a need for disruption and innovation to engage with this novel threat and to move towards a

sustainable society. DEA implores the inquiry to show strong leadership to address this public health emergency.

1. Reducing emissions to protect the health of the community

There is strong scientific consensus that we need to drastically reduce our emissions with protection of human health being a central factor. There has been a federal policy failure to address this. WA has massive carbon resources with significant warming potential.

The threats posed to health by climate change have been clearly articulated. Lack of full scientific certainty cannot be used as a reason for postponing measures to protect health and due consideration should be given to ensure that the health and well-being of future generations is at least as good if not better than the current one.

There is an urgent need therefore to reduce our GHG emissions in order to protect the health of West Australians from climate impacts both now and into the future.

Acknowledging the changing legal landscape with regards to climate change, we would urge the government to demonstrate and establish good climate governance by using evidence-based decision-making in mitigation and adaptation and provide transparency and risk disclosure with effective community engagement and collaboration.

The WA Government's Department of Water and Environment Regulation is currently producing a whole-of-government climate change policy and the WA EPA is consulting on guidelines for emissions from new GHG intensive projects. As such, it is very important that the health impacts and risks, health and social costs, and cost-benefits of mitigation (such as reduced air pollution) are considered in such processes.

The DoH has played and continues to play a key role in regulating or informing regulation of harmful industries, including asbestos, tobacco and pesticides. The health voice has been largely absent on the issue of GHG emissions; yet we view GHGs as a pollutant with far greater risks to human health – it is obligatory that the DoH takes responsibility for such health risks and acts to protect the community based on science without being swayed by other economic imperatives.

The IPCC states that we need to be at net-zero carbon emissions globally by 2050[69]. With a concern for earth system feedback loops from events such as permafrost melting that would greatly impact projections, countries who are able, should reach this goal sooner. Australia with its vast renewable resource needs to be more ambitious in its targets. The Climate Change Authority 2015 advocated that the GHG emissions

reduction target should be 40-60% on 2005 levels by 2030 to be in line with the science of the time[70]. Given the shift since then to the lower target of 1.5°C and the concern for feedback loops, the 60% figure is to be considered a minimum.

Recommendation 1. The WA Health Department (DoH) call for a renewable energy target that will allow for a planned transition and a net-zero emissions target by at least 2050 with an interim target of at least 60% on 2005 levels by 2030, in line with the science, to protect the health of the community.

Recommendation 2. Consistent with the science and the need to rapidly reduce emissions, DoH advocate for no further major fossil fuel developments in Western Australia.

Recommendation 3. The DoH with consideration of the health impacts have a regulatory role in setting WA emissions reduction targets and regulating high emitting industries.

Recommendation 4. At the very least, DoH should have a mandatory requirement to be a key stakeholder involved with or consulted on decisions to approve all new major emitting projects with advice made public. One option to achieve this would be bringing forward preparation and implementation of Part 15 of the Public Health Act 2016 to expedite a robust Health Impact Assessment (HIA) capability in Western Australia, as was recommended in the final report of the Climate and Sustainability Forum.

Recommendation 5. The DoH recommend the development of a WA transition plan for affected fossil fuel (coal and gas) industry workers, to minimise health impacts of sudden industry shocks from an economic shift to renewable based energy.

Fossil fuel workers should be included in both adaptation and mitigation planning, and development of transition plans. Without engagement of workers in a process that ensures their justice, mitigation measures are likely to meet significant community resistance. Conversely, there are major job opportunities in transitioning to low carbon industries and services.

As the world moves to net-zero emissions, transition is inevitable. An early start to the process allows for a more graduated and less socially disruptive transition.

2. Reducing the carbon and environmental impact of health services

It is well recognised that healthcare services themselves have notable greenhouse gas emissions and a natural resources impact[71].

A recent study estimated the carbon emissions from the Australian healthcare sector are equivalent to seven percent of the nation's current emissions[72]. Essentially our healthcare services operate in a way inconsistent with protecting and promoting health. It is recognised that many measures to reduce emissions or waste may also save money for the healthcare sector (e.g. using less energy, changing pharmaceutical practices, changing care models, improved waste management). In addition, sustainable healthcare services, achieving the level of emissions reduction needed, ultimately include reassessing models and systems of care to reduce carbon and environmental impacts and support the wider public health of the community with a more preventative approach. Institutions now recognise the importance of including sustainability as one measure of safety and quality in healthcare[73].

We would also refer to DEA's own proposal for an Australian Healthcare Sustainability Unit (HSU)[74]. While focused on a national body, the content of the report is relevant at a state level.

Furthermore, we note that there is broader support for addressing healthcare sustainability from within the health sector with the AMA preparing its own position statement[75].

Recommendation 6. The DoH establish and resource a Sustainable Development Unit based on the UK's model of the same, as per the final recommendations of the Sustainable Health Review.

The unit could achieve "a reduction in environmental footprint including energy use, water use, emissions and consumables, driven by local staff, supported by system executives, and coordinated by dedicated resources on a systemwide basis guided by the successful National Health Service (NHS UK) model". In addition, a network of sustainability officers or teams and committees should exist at health service provider level.

Recommendation 7. The DoH sets a mandatory target for all health services to be net-zero emissions by at least 2050 with an interim target of at least 60% on 2005 levels by 2030, in line with the science.

Recommendation 8. The DoH, as system manager, publish and implement an overall framework or strategy to guide a systematic response to the health impacts of climate change.

This could be using models such as the Climate and Health Alliance's Framework for a National Strategy on Climate, Health and Well-being for

Australia[76], or the Lancet Countdown's methods using 40 indicators divided into five broad sections: climate change impacts, exposures and vulnerability; adaptation, planning and resilience for health; mitigation actions and health co-benefits; economics and finance; and public and political engagement[77]. It should include targets and indicators to measure progress, with a report made publicly available on a regular basis. The Unit should report directly to the Director General of the Department of Health, and be supported by a ministerial or director general committee to ensure interdepartmental buy-in.

3. Preparing and protecting the health of the community from unavoidable climate impacts

It is well recognised that due to current and past emissions, some changes in the climate are unavoidable. DoH, the health sector and various sectoral institutions have a responsibility to plan for services and infrastructure and to reduce the vulnerability of communities to anticipated and potential impacts.

Recommendation 9. DoH lead and coordinate a comprehensive adaptation process to prepare WA communities for climate health impacts.

Such a plan should address both obvious and high-end risks (or worst-case scenarios), including extreme weather events, food price increases, critical infrastructure failure, social and economic disruption, and compounding impacts, as outlined above. Work should include support for soft programmes delivered by the community services sector or local government to contact vulnerable populations during heatwaves, plus support for infrastructure changes to improve capacity to reduce heat or sun exposure (street trees, shade, green spaces, water fountains etc.).

Adaptation needs to consider already vulnerable or disadvantaged populations or communities. These groups include Aboriginal people, culturally and linguistically diverse populations, low socio-economic individuals, rural, remote and outer urban populations, children, the elderly, the homeless, outdoor workers, and people with pre-existing illness. These groups need to have a role in co-designing and co-implementing adaptation plans.

Recommendation 10. People most affected by climate change are included in co-design of climate change responses, including both adaptation and mitigation programs and policies.

4. Role of the health sector in influencing the public understanding of climate change

The health sector and DoH have a vital role in increasing the public understanding of climate change and health. The Health Department has credibility and resources to do this, far more so than existing advocacy groups. Topics that should be discussed include publicly drawing the link between climate change and health (it is largely still seen as an 'environment' problem by the public) and highlighting health 'co-benefits', such as reducing morbidity and mortality related to air pollution, obesity and physical inactivity associated with the ongoing burning of fossil fuels and a high rate of car use.

There is also an urgent need for the health sector and the Health Department to distance itself from fossil fuel companies and it should not be accepting corporate sponsorship from such entities.

There are clear similarities between the tobacco and the fossil fuel industry and their use of tactics to delay regulatory action that would curtail their business, such as creating doubt on the science of climate change. Oreskes and Conway in their book Merchants of Doubt clearly outline how many of those working for the tobacco industry are now deploying the same tactics for the fossil fuel industry[78].

Finally, the health sector, and doctors in particular, should be showing community leadership and making clear and obvious statements about the urgent need to reduce emissions.

"Doctors have engaged on issues of societal importance from the abolition of slavery to tobacco control, and it is time for us to stand up on this issue, as it affects not only our patients and our professional practices but also our communities and our children. Physicians who had previously thought that climate change might be an important environmental issue were now seeing it as a health issue of the utmost importance and urgency … Doctors are trusted voices in the community, in the organisations they are associated with and in the corridors of government, but their potential to influence climate change policies, inside health systems and more widely, is currently under-utilised."[79].

Recommendation 11. The DoH and the health sector in general lead a visible public process to draw the link between the climate crisis and health, and articulate the need for immediate emissions reduction, including the need for WA need to be net-zero by at least 2050 with an interim target of at least 60% on 2005 levels by 2030.

Recommendation 12. WA Government administered health services publicly reject further sponsorship or advertising from fossil fuel companies for programs, facilities or research. Service contracts issued by

DoH stipulate a condition that providers shall not allow fossil fuel sponsorship or advertising.

5. Increasing the knowledge base to support climate health action

As outlined in the Background Paper to the Climate and Sustainability Forum, there is limited research evaluating the health risks and responses to climate change in Western Australia. Some topics useful to build further quantitative and qualitative knowledge in include:

- How many lives would be saved/diseases averted by particular mitigation or adaptation measures;
- Carbon impact and financial savings/cost of implementing measures across health services eg converting the WA Health fleet to partly electric vehicles or increasing percentage of renewable energy used in hospitals;
- Understanding current and future climate health impacts for vulnerable groups and communities, compounding impacts, critical infrastructure, food and water insecurity, and high-end or tail risks;
- Existing or expected infectious disease risks;
- Health professional understanding and response to climate change health risks;
- Integration of climate health risks with wider risks and responses to the ecological crisis, including different measures of societal progress.

Recommendation 13. WA become a leader in climate health research nationally, with funding and direction from the WA Government.

This might include provision that the Future Health Research and Innovation Fund encourages, supports and allows for investigation, research and development on climate change and health, and environmental sustainability solutions.

Recommendation 14. WA Health advocate for climate change and health becoming a research priority for the National Health & Medical Research Council and the Medical Research Future Fund.

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