



Climate change in
Western Australia –
Issues paper
Consultation summary



November 2020

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Department of Water and Environmental Regulation

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Contents

Background	v
1 Transforming energy generation	1
2 Industry innovation	2
3 Future mobility	3
4 Regional prosperity	4
5 Waste reduction	5
6 Safe and healthy communities	6
7 Water security	7
8 Liveable towns and cities	8
9 Resilient infrastructure and businesses	9
10 Protecting biodiversity	10
11 Strengthening adaptive capacity	11
Campaigns	12
Appendices	13

Figures

Figure 1: Respondent type	vi
Figure 2: Region	vi

Background

On 4 September 2019, the Government of Western Australia released the [Climate change in Western Australia – Issues paper](#) (issues paper) to invite public submissions on the issues and opportunities that climate change presents for Western Australia.

Consultation on the issues paper closed on 29 November 2019 with 3,758 submissions received from a broad cross-section of the Western Australian community. A total of 506 submissions (13%) were received from businesses, individuals and peak groups via email or through the online consultation hub. A further 3,252 submissions (87%) were received from individuals via interest group campaigns. Submissions came from a broad spectrum of respondents, age ranges and geographic locations, with 18 per cent coming from respondents in regional or rural Western Australia.

The issues paper posed a total of 39 questions across the following areas:

- 1 Transforming energy generation
- 2 Industry innovation
- 3 Future mobility
- 4 Regional prosperity
- 5 Waste reduction
- 6 Safe and healthy communities
- 7 Water security
- 8 Liveable towns and cities
- 9 Resilient infrastructure and businesses
- 10 Protecting biodiversity
- 11 Strengthening adaptive capacity

This summary report is structured in line with the themes of the issues paper and outlines key themes emerging from submissions.

Stakeholder submissions to the issues paper will inform the development of Western Australia's new State Climate Policy, due for release later in 2020.

Figure 1: Respondent type

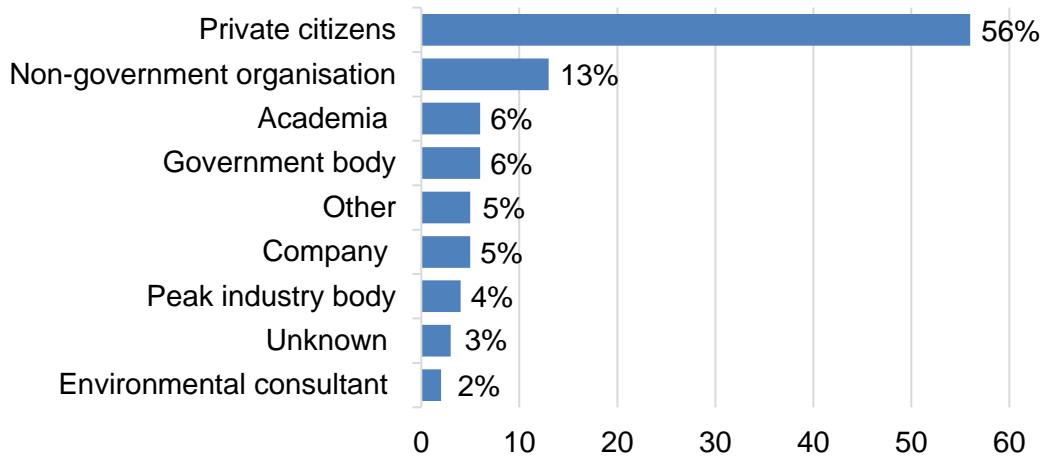
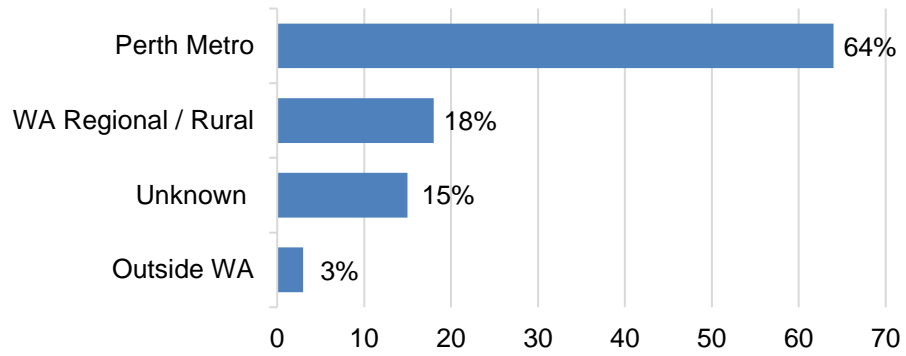


Figure 2: Region



1 Transforming energy generation

Submissions to the issues paper indicated strong support for the transition away from fossil fuels, with respondents identifying both political barriers to decarbonising Western Australia's electricity grid, as well as technical challenges, such as insufficient energy storage. Many submissions highlighted the lack of optimal policy settings, such as a national market mechanism to reduce emissions.

Respondents raised the need for State Government leadership, policies and timeframes to phase out fossil fuels and invest in renewable energy generation. Common suggestions to support decarbonisation were improving energy storage via batteries or hydroelectricity, investing in new microgrids to decentralise electricity generation, and further investment in wind and solar.

Key policy suggestions included incentives for home battery storage systems, incentives for small-scale solar, and support for microgrids, stand-alone power systems and community-based renewable energy projects. Submissions also supported a roadmap for Western Australia's energy transition, along with measures to enhance storage capacity to facilitate greater penetration of renewable energy in Western Australia's electricity grid.

A significant number of respondents considered that the electricity sector should make a pro-rata or greater contribution to emissions reduction targets given its contribution to overall emissions and the cost effectiveness of emissions abatement in this sector. There was strong support for the transition to low-carbon energy generation to occur as quickly as possible.

2 Industry innovation

A significant number of submissions supported greater investment in renewable technology and businesses transitioning to cleaner energy fuels and technologies. Identified areas of interest included hydrogen, solar power, lithium batteries, battery storage and electric vehicles. Several respondents highlighted the opportunity for Western Australia to manufacture resources locally, rather than export raw materials.

Key policy suggestions included subsidising low carbon business and energy ventures, promoting investment in clean industries and technologies, and establishing carbon emissions targets. Some respondents mentioned the need to diversify Western Australia's economy and reduce reliance on fossil fuels.

Respondents acknowledged the resource sector's current reliance on diesel and other fossil fuels, along with economic barriers to decoupling of energy and emissions, the challenges of remote operations, and the need for specific policy intervention to drive the low-carbon transition.

Many respondents highlighted the opportunity for Western Australia to capitalise on its substantial natural renewable resources, with broad support for renewable energy such as solar and wind power. Respondents also indicated support for more research, education and dissemination of information to reduce emissions from households and industry.

Lack of State Government policies and regulations were also perceived as barriers to cleaner industries, with some respondents calling for government leadership and supporting policies to foster a low-carbon economy.

Some respondents indicated support for the 'polluter pays' principle to ensure emitters are responsible for their emissions.

A small number of respondents supported exemptions or policies for trade-exposed sectors. Submissions considered that any exemptions must still allow Australia to reach legislated emissions targets.

Respondents noted that they had generally not assessed the implications of making the transition to low-emissions technologies and practices for their business.

3 Future mobility

Submissions to the issues paper indicated strong support for provision of more electric vehicle (EV) charging stations and infrastructure, including fast-charging facilities. There was support for State Government EV fleet targets to increase the numbers of EVs available in the second-hand market and ensure Western Australia is well positioned for the transition to cleaner transportation.

There was some support for more electric public transport (including trains). Respondents also emphasised the need for better vehicle fuel efficiency and emission standards, as well as measures to educate the community about EVs and other low-emissions transport options.

A significant number of submissions identified cost as a key roadblock to purchasing low-emissions vehicles or EVs, with some respondents citing barriers such as the lack of EV charging stations, or concern over the range capability of EVs. So-called ‘range anxiety’ was highest among organisations and regional residents. A minority of respondents considered that EVs are not practical for certain uses such as four-wheel driving, long-distance or regional driving.

There was strong support for the introduction of policies to encourage the uptake of low-emissions vehicles, such as EVs, in Western Australia. This included providing incentives or rebates for purchasing EVs, discounting registration costs and support to reduce the cost of EV charging points.

Respondents highlighted the need to improve cycling infrastructure, such as more cycle lanes, as well as the importance of better urban planning to reduce reliance on private vehicle use.

Other suggestions included investing further in the public transport network, investing in new and emerging technologies such as hydrogen industries, reducing road freight, investing in electric public buses powered by renewable energy and water taxis.

4 Regional prosperity

Submissions identified a range of concerns about climate change in regional communities, including drought, bushfires, biodiversity loss, hotter temperatures, more extreme weather events, coastal erosion and increased flood risk. Climate impacts on agricultural and horticultural industries were also highlighted. Landholders and communities expressed acute concern about water security as a result of reduced rainfall from climate change.

Respondents also identified the potential for climate change to adversely impact general wellbeing and mental health, as well as fisheries and tourism.

There was strong support for carbon farming, tree planting and other sequestration activities to increase the economic resilience of regional communities and primary industries through diversified revenue streams. Submissions highlighted the need for better land management and conservation of water, investment into crop varieties resilient to climate change, and the support of alternative industries. Other suggestions included measures to reward clean industries and support Aboriginal employment.

Respondents emphasised the importance of financial support for workers impacted by the transition away from fossil fuels.

Prominent suggestions to support resilient primary industries included research and development for sustainable farming or 'regenerative agriculture', support for alternative fuels or biofuels, and development of drought resistant or salt tolerant crops.

Other suggestions included supporting land restoration and agroforestry, developing a better understanding of the carbon footprint of food production, and establishing a long-term low-carbon agriculture strategy and a carbon farming strategy for Western Australia.

5 Waste reduction

Submissions indicated significant support for better waste management to further reduce greenhouse gas emissions from waste, in particular improved recycling and sorting practices.

Other suggestions included increasing the capacity of local government collection systems for food organics and garden organics (FOGO); capturing landfill gas; using waste to generate electricity; and investing more into waste treatment and recycling facilities. Other submissions expressed concern about possible incineration of waste.

Respondents highlighted the need to change community attitudes and implement practices to reduce food and packaging waste, with respondents indicating support for a ban on single-use plastics.

Policy suggestions included product stewardship schemes; legislation to tackle packaging waste, reduce e-waste and support a circular economy; and incentives for the use of recycled products. Submissions emphasised the importance of behaviour change in reducing and avoiding waste, with strong support for education and community-led initiatives.

There was also strong support for diversion of organic waste from landfill. Some respondents recommended compost facilities in all State Government buildings, and more sustainable packaging materials. There was also support for implementation of a container deposit scheme.

6 Safe and healthy communities

Bushfires were identified as a key climate risk to community health and safety, with submissions emphasising the increased risk, frequency and intensity of bushfires in Western Australia as a result of climate change.

Respondents also indicated concern about the impacts of heatwaves, increased incidence of drought and the loss of Western Australia's biodiversity. Other issues of concern included extreme weather events, storms and the impact of rising sea levels on coastal communities.

Submissions highlighted the effects of climate change on health and wellbeing, such as impacts to mental health, vulnerable groups and standards of living. Some submissions noted that existing social and economic inequities will exacerbate the effects of climate change on the health of some people in the community.

Respondents also noted that climate change will modify patterns and incidence of disease which may further impact health outcomes.

Respondents noted possible impacts from declining agricultural or horticultural productivity, along with increased living costs, pressure on frontline and emergency services, and risks to infrastructure associated with rising temperatures.

Respondents expressed strong support for improved State Government policies and strategies to better prepare communities for climate impacts. Suggestions included better urban planning, retrofitting of existing building stock, more green space and vegetation, education and awareness programs, and actions at the local government level (e.g. coastal hazard management). Submissions also called for more sustainable water use, water efficiency, subsidy for rainwater tanks and waterwise plantings.

There was also strong support for managing climate risks through policies or targets to reduce emissions.

7 Water security

Respondents indicated strong support for policy and regulatory changes to improve water use efficiency and adapt to a drying climate. Discouraging or banning reticulated lawns was suggested, along with measures to support more waterwise planting. Other suggestions included compulsory rainwater tanks in new buildings, an increase in water recycling and aquifer recharge, and better management of groundwater resources.

Submissions emphasised the need for policies to encourage water use efficiency, and better regulate bore water. There was considerable support for education, advertising and behaviour change programs to improve water consumption.

Pricing and taxing measures to drive water efficiency were mentioned by some respondents, with other suggestions including water efficient and waterless toilets, installing the three-pipe system to distribute recycled water, and use of renewable energy to power desalination (thereby reducing energy consumption and emissions).

Some submissions proposed rebates, incentives or programs to support technologies such as grey water use and rainwater tanks, with others supporting further water restrictions to encourage more efficient use of water.

There was strong support for regulatory and policy measures to enhance water security for the agricultural sector. These included effective water resource allocation planning, shifting to less water intensive crops and stock, updating irrigation policies, improving soil and research into drought resistant agriculture.

Respondents also highlighted the need for behavioural change to improve water efficiency in the agricultural sector, including adopting regenerative agriculture methods, selecting crop and livestock suited to the climate, and changing to less water-intensive farming practices. Other suggested approaches addressed broader environmental degradation and included revegetating land and stopping deforestation.

8 Liveable towns and cities

A significant number of respondents identified current infrastructure as a barrier to improving energy efficiency in the built environment. Submissions considered that sustainability for new developments, urban sprawl and building design were key issues, and emphasised the need for more green space in urban areas.

A large number of respondents identified policy and regulatory barriers to improving energy efficiency in the built environment, with some submissions noting that enforcement of existing standards was not strong enough. Respondents also noted a lack of information and end user knowledge about building performance as contributing to poor building practices and outcomes.

Some submissions considered the upfront cost of energy efficient buildings to be the main barrier to low-energy and low-carbon buildings. Respondents also indicated concern about urban heating and the ‘urban heat island’ effect from vegetation loss, which reduces liveability and increases energy consumption. Suggestions to address this trend included requirements for developers to retain or re-establish vegetation, and planning policies to support nature strips and wildlife corridors in urban areas.

There was strong support for State Government leadership and targets for carbon-neutral buildings. There was also support for minimum energy performance standards for appliances to reduce energy use, particularly for lighting, heating and air conditioning. Respondents also noted the need for better information and ratings systems to allow for more informed decision-making, including mandatory disclosure of building energy ratings.

A significant number of respondents expressed the expectation that climate change would affect the liveability of their neighbourhood or region through hotter temperatures, reduced rainfall, increased fire risk, the rise of sea levels and flooding.

9 Resilient infrastructure and businesses

Respondents identified decreased rainfall, higher temperatures and flooding or rising sea levels as key climate risks for the agricultural and resource sectors. Submissions outlined a range of possible impacts including reduced agricultural production, increased bushfire frequency or intensity, reduced water supply and reduced agricultural productivity.

Respondents also highlighted the risks to infrastructure, such as buildings and roads, from extreme weather events. Other identified areas of concern for businesses included risks associated with future carbon-reduction policies and how markets price emissions (so-called transition risks), interruption of services, escalating insurance costs and refusal of claims.

The majority of respondents reported having assessed the impact of climate risks on their business, assets or infrastructure. However only a very small proportion reported having implemented adaptation measures, and monitoring.

Submissions identified the need for improved information to enhance the resilience of their business under projected climate change. Specific needs included more accurate future weather forecasting and information on the implications of future climate change for specific regions or sectors.

Respondents indicated support for funding through coastal hazard risk management and adaptation planning to assist with decision-making, and called for additional funding to support local government in managing coastal hazard risks.

Respondents also supported policy or regulatory measures to enhance the resilience of public and private infrastructure, including improving building specifications, standards and practices; embedding climate change considerations into decision-making; and better managing and planning the coastal zones.

10 Protecting biodiversity

Respondents expressed strong support for improved land use and biodiversity management practices to reduce vulnerability of ecosystems to climate change, improve resilience and protect biodiversity.

Submissions outlined a range of suggestions including greater habitat protection, revegetation of degraded rural areas, enhanced protection of existing native vegetation, and the restriction of clearing in peri-urban areas. Submissions also supported expansion of the conservation estate.

There was also support for the protection and restoration of ecosystems, and the establishment of more wildlife corridors. Respondents also emphasised the importance of greater resourcing for programs and agencies, such as Landcare and the Department of Biodiversity Conservation and Attractions.

Submissions also called for increased support for local environmental groups and volunteers, and collaborations with landholders or communities to enhance resilience and improve biodiversity outcomes.

Specific suggestions to protect biodiversity and enhance resilience included regenerative agriculture, relocation of species to more viable areas, an increase in conservation areas, and climate research. Other suggestions included educating the community on climate change risks and adaptation options, and providing incentives for initiatives to support the resilience of biodiversity.

11 Strengthening adaptive capacity

Submissions identified lack of knowledge, information or skills as a barrier to adaptation. This included insufficient practical or accessible information about climate change and inadequate understanding about how to respond to reduce vulnerability and enhance resilience. Some submissions also noted public apathy and a resistance to accepting the reality of climate change.

Suggestions to address knowledge gaps included improved collaboration across government and in the private sector, communication strategies and education initiatives. There was strong support for more research to underpin knowledge on climate impacts and adaptation options.

Submissions identified the need for government leadership, including local government action and support for the State Government to lead by example.

Respondents identified the need for an adaptation education program targeted at the private sector and across the community, with improved communication about the scope and scale of climate risks.

Some submissions noted the lack of financial resources to do adaptation planning, along with a resistance to change and competing priorities within organisations.

Campaigns

A total of 3,252 submissions were received from campaigns offering respondents standardised, or pro forma, submissions. The table below outlines the number of responses and the campaign source. Conservation Council of Western Australia (CCWA) and Clean State campaigns accounted for the majority of pro forma submissions.

The pro forma submission text for all campaigns can be found in appendix A. Names of respondents can be found on the online consultation library for each campaign.

Campaign (source)	Volume
Climate Change Campaign (CCWA and Clean State)	1551
Frack Free Future (CCWA)	1416
Protect animals and wildlife (unknown)	226
Bushfire threat (unknown)	59
Total	3252

While campaign-based submissions offered standardised text, approximately one in 10 respondents modified their submissions to vary the standard response or include additional detail. A large number of modified pro forma submissions made policy suggestions, such as mechanisms to transition to net zero emissions, support for carbon sequestration and renewable energy, a phased retirement of coal-fired generation and clear requirements for large emitters.

Submissions called for Western Australia to be a leader and set an example, take immediate or urgent action on climate change, and provide financial support for clean jobs and a just transition for affected workers.

Respondents expressed concern about bushfires, the future impacts of climate change including drought and heatwaves, and concern for future generations. Submissions also emphasised the impact climate change will have on Western Australia's biodiversity.

Respondents called for better resourcing of fire and emergency services, specific legislation or policy from the State Government to drive the low carbon transition, and a ban on hydraulic fracture stimulation in Western Australia (the latter associated with submissions from the Frack Free Future).

Appendices

Appendix A – Campaign submissions (pro forma)

Conservation Council and Clean State

Thank you for the opportunity to comment on the WA government's climate change discussion paper. I am deeply concerned about climate change and support strong and urgent action as a matter of highest priority for all levels of government.

Here in WA our carbon pollution is rising out of control, but we can do so much better. Real action on climate change will deliver thousands of new jobs and opportunities as we become part of the global solution.

I call for a comprehensive state-wide policy on climate change that includes the following at a minimum:

- 1) Immediately reduce WA's carbon pollution and achieve zero net emissions as soon as possible. Legislate to deliver science-based interim targets and an emissions reduction pathway in line with a fair and equitable contribution to limiting global warming to 1.5 degrees.*
- 2) Deliver a billion-dollar Clean State Jobs program to unlock thousands of new jobs in clean industries and support a just transition for affected workers and communities.*
- 3) Completely repower WA with renewable energy, phase out climate damaging fossil fuels, and prevent any new or expanded coal, oil or gas developments in WA including LNG and fracking.*
- 4) Hold WA's biggest polluters to account. Require companies to reduce emissions and offset their climate damage by investing a portion of profits in clean industries, carbon farming and renewable energy.*
- 5) Permanently protect natural carbon stores in WA's forests and other ecosystems, and rapidly transition away from native forest logging and clearing.*
- 6) Support climate adaptation programs and partnerships, including with Aboriginal people and communities, farmers, local governments, businesses and other sectors.*

Frack Free Future

If gas fracking proceeds here in Western Australia, it will have a profound impact on our climate and prevent our state from meeting international obligations to reduce carbon pollution.

Gas is a polluting fossil fuel that releases greenhouse gas emissions at every stage of the industry, including extraction, processing and burning of gas for energy. However Western Australia has huge potential in clean renewable energy solutions and we do not need more gas.

A climate change policy for Western Australia must adopt and legislate science-based emissions reduction targets for our state that reflect international commitments

under the Paris Agreement. Development of a gas fracking industry in WA is totally inconsistent with such a policy.

I want to see a climate change policy in WA that permanently rules out gas fracking and other fossil fuel developments and instead supports renewable energy solutions for our state.

Protect Animals and Wildlife

I am deeply concerned about the impacts of climate change on animals and wildlife. Drought, fire, heatwaves, and extreme weather events are all impacting animals in cruel and heartbreaking ways.

WA is the only state with rapidly rising carbon pollution in Australia and this is pushing global temperatures higher and higher. As the world's biggest polluters, it is Western Australia's responsibility to prevent further suffering by getting pollution under control now!

I am calling for the strongest possible action on climate change and pollution as part of WA Government's Climate change policy.

Including immediate cuts to pollution from all sectors. Science-based targets must be introduced and legislated, and WA's biggest polluters must be held to account for the damage they are doing to our animals, people and the environment.

In addition, everything possible must be done to help wildlife and animals survive a drying, warming climate. The WA climate policy must protect wildlife habitat by preventing logging, clearing and other avoidable loss of wildlife habitat and biodiversity anywhere in WA.

Bushfire Threat

Thank you for the opportunity to comment on the WA government's climate change discussion paper. I am deeply concerned about climate change and extreme weather events like bushfires currently raging across the Australian continent.

We have the whole summer ahead of us. We're now more vulnerable to fires as hotter and drier weather becomes the new normal because of climate change. The south-west of Western Australia is one of the most fire prone regions in the world. The number of days of severe fire danger weather is projected to almost double in south west Western Australia by 2090, with a clear scientific consensus linking climate change and the increasing number of heatwave days to higher bushfire risk in Western Australia. Very hot, dry and windy days create very high bushfire risk. As the only state with rising pollution (23% increase since 2005) and the only state with no climate change legislation, Western Australia desperately needs a climate policy which helps to mitigate these risks and protect our unique environment and communities.

To keep Western Australians safe from extreme weather, we need to better resource our firefighting & public services and take real action on climate change. By 2030, the number of professional firefighters in WA will need to more than double to meet the

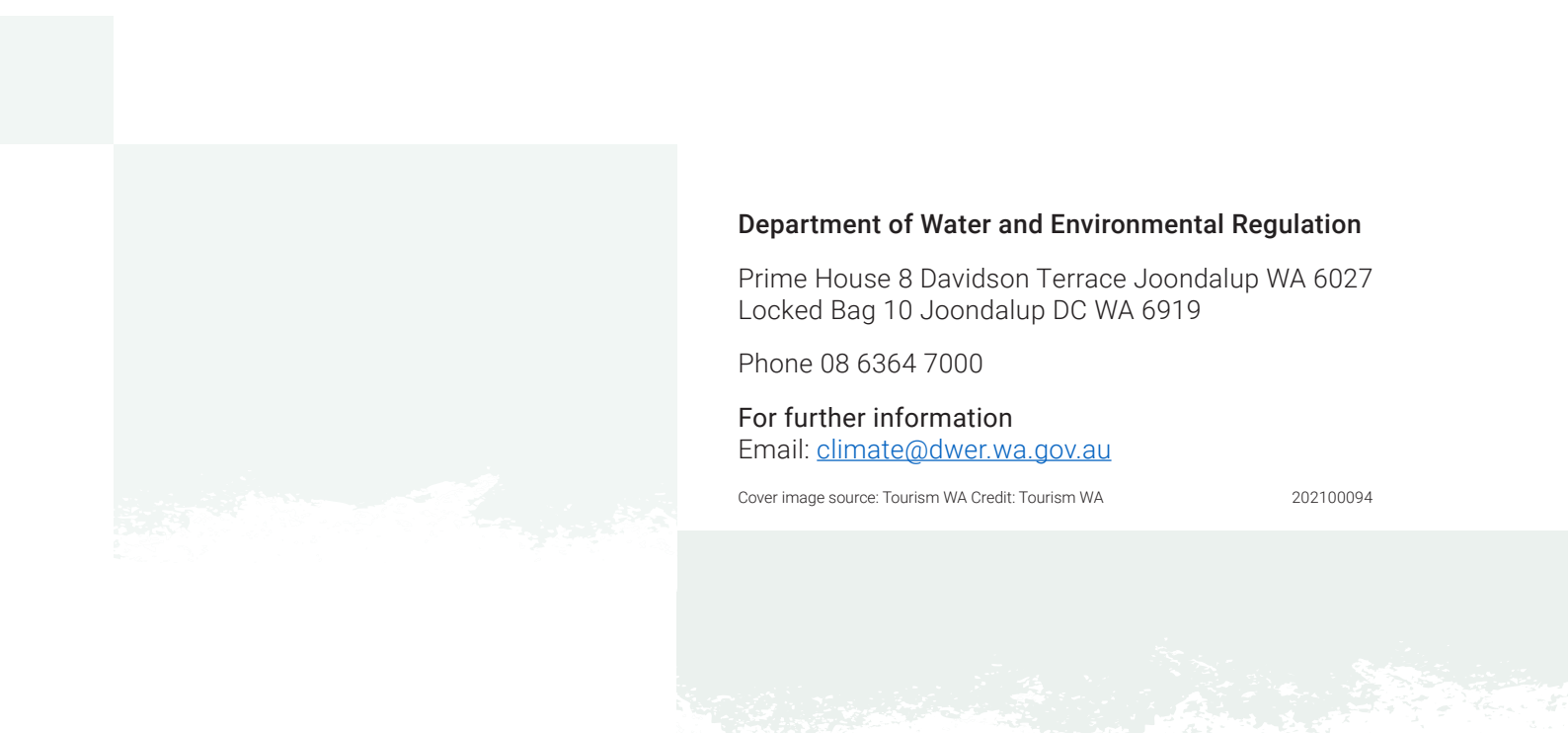
increasing risk of bushfires. The economic, social and environmental costs of increased extreme heat and bushfire activity is likely to be immense:

In Perth, from 1994-2006, there were over 20 heat attributable deaths per year. If average maximum temperatures were 2°C warmer, this number would almost double to 40 deaths. Some of Western Australia's most fire-prone regions may become unliveable as the risks to lives and property caused by bushfires continue to increase. Without effective action on climate change, there will be 20 times the number of dangerous days for outdoor workers by 2070, reducing productivity.

We are in a climate emergency and new fossil fuel projects like thermal coal and LNG production make the problem much worse for Western Australians. Here in WA our carbon pollution is rising out of control, but we can do so much better. Real action on climate change will deliver thousands of new jobs and opportunities as we become part of the global solution.

I call for a comprehensive state-wide policy on climate change that includes the following at a minimum:

- 1) Immediately reduce WA's carbon pollution and achieve zero net emissions as soon as possible. Legislate to deliver science-based interim targets and an emissions reduction pathway in line with a fair and equitable contribution to limiting global warming to 1.5 degrees.*
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