

29 November 2019

Climate Change Consultation
Department of Water and Environmental Regulation
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WA, 6919

climate@dwer.wa.gov.au



Environment Institute
of Australia and
New Zealand Inc.

Dear Sir / Madam

RE: Climate Change in Western Australia- Issues Paper

The Environment Institute of Australia and New Zealand (EIANZ or Institute) Western Australia Division (EIANZ-WA) is pleased to provide feedback on the *Climate Change in Western Australia - Issues Paper* (the Issues Paper).

We are a not-for-profit, professional association for environmental practitioners. EIANZ promotes independent and interdisciplinary discussion on environmental issues and advocates good practice environmental management delivered by competent and ethical environmental practitioners.

We forward this submission on behalf of the Western Australian EIANZ members. Currently we have 150 members in WA while across Australian and NZ we have over 2000 members. Our members come from a range of technical disciplines including certified environmental practitioners (CEnVP), ecological consultants, environmental advocates and environmental specialists working in government, industry and the community.

The Division supports the opportunity for stakeholders to contribute early to state climate policy development. This submission aligns with the Institute's Position Statement on Climate Change¹ and draws from the EIANZ submission to Australian Climate Change Policy in 2017² and recent our media statements^{3,4}.

The Institute accepts the international consensus of the Intergovernmental Panel on Climate Change (IPCC) that human activities are the main cause of the climate change observed over the last century. The global nature of climate change requires integrated international, national and local responses.

We endorse the Paris Agreement of December 2015 to limit the increase in global average temperature to less than 2° C, and pursue efforts to limit the rise to 1.5° C.

We also support the United Nations Sustainable Development Goals, and in particular, Goal 13: Take urgent action to combat climate change and its impacts.

Nationally, the EIANZ views the most pressing climate concerns as:

- **More frequent extreme weather events** - Australia must create stable and credible laws, policies and institutions that deliver effective action to substantially reduce domestic greenhouse gas emissions over the medium term.
- **Threatened species and communities** - Australia's unique species are under pressure from threatening processes such as pest plants and feral animals, habitat destruction and pollution. Well-coordinated, long-term national effort is required to reverse the loss of biodiversity, particularly threatened species and ecosystems.

- **Water management** - The episodic and unpredictable nature of water flows in the Australian environment are particularly challenging. Increasing demand for water is placing pressure on ground waters, rivers and wetlands. Implementation of a long-term national strategy is required to ensure that Australia's water resources are sustainably managed.
- **Environmental law and policy** - Australia's environmental regulatory regime needs an overhaul, because the existing system is not aligned and does not adequately protect the environment. The next generation of national environmental laws, policies and management practices require the same effort and community engagement that shaped the development of the National Strategy for Ecologically Sustainable Development.

EIANZ-WA supports the following statements made in the Issues Paper. These statements are consistent with EIANZ's recent call for all decision makers to take stronger action on climate change.

"While a nationally consistent policy framework which we can rely on to deliver the commitments of the Paris Agreement is urgently needed, Western Australia won't wait on the Australian Government"

"A clear State Government policy and roadmap for action will ensure we manage the low carbon transition in a considered way"

"The government of WA has committed to working with all sectors of the economy to achieve net zero by 2050. The government's aspiration creates the overarching framework for the State Climate Policy"

Responses (where applicable) to questions raised in the Issues Paper are provided in Attachment 1.

EIANZ-WA highlights the following gaps in the issues and opportunities listed in the Issues Paper:

- Limited consideration of how forecasted GHG increases could be effectively avoided, managed or reduced.
- Limited consideration around information, education and myth busting. Climate of the Nation 2019 report notes 25% of Australians believe natural causes are the main causes of Climate Change⁵.
- Limited consideration regarding native vegetation clearing/ management.
- No consideration regarding the forestry industry in WA.
- No consideration regarding tourism industry in WA.

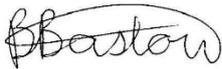
The establishment of a state climate policy is long overdue with all other states having some form of policy framework (NT under development). Some of the key policy initiatives occurring in other jurisdictions⁶ that we recommend be considered by WA during policy development include:

- Commitment to an emissions reduction target and a renewable energy target in addition to a net zero emissions target (ACT, VIC, QLD, TAS & SA) in alignment with the goals established under the Paris Agreement.
- Legislation of emission reduction target (VIC, SA, TAS & ACT), net zero emission target (VIC & ACT), and renewable energy target (VIC & ACT).

- Establishment of an independent organisation to provide advice on setting or meeting emission reduction targets (QLD, NSW, VIC, SA & ACT).
- Publication of detailed state specific emission inventories (ACT, VIC & TAS).
- Clear outlines on how climate change consideration is being embedded into government decision-making (VIC & NSW).

We thank the Department for the opportunity to contribute to state climate policy development and look forward to being involved as it progresses. If there are any queries regarding this submission, please contact Belinda Bastow, President EIANZ-WA Division on wa@eianz.org.

Yours sincerely

A handwritten signature in black ink that reads "BBastow". The signature is written in a cursive style with a large, sweeping flourish over the "B" and "astow".

Belinda Bastow
President
EIANZ – WA Division

Attachment 1: Responses to Questions Raised in the Issues Paper

Key Areas	Paper Questions	EIANZ Commentary
1. Transforming energy generation	What are the main challenges for decarbonizing Western Australia's electricity supply while ensuring adequate generation capacity, security and reliability?	The key challenge to decarbonizing the WA energy sector is a lack of National and State policy that supports the expansion of renewable energy and the move from large base load power generation to micro grids.
	What are the most effective ways to overcome these challenges by 2030?	WA must introduce policies that support the expansion of renewable energy sources, the introduction of large-scale battery storage within the network and the introduction of legislation that requires industry to implement energy reduction programs.
	Should the electricity sector make a pro-rata (or greater) contribution to Australia's national greenhouse gas emission targets?	QLD, VIC, ACT – targets are supported by reverse auctions that fund renewable energy projects by awarding contracts for difference to supply electricity. In a reverse auction, electricity generators compete to win the auction and prices will typically decrease as the sellers underbid each other. Contracts for difference are a long-term contract in which the government guarantees the renewable generator a fixed price for its electricity generation for the duration of the contract ⁶ .
	How fast do you think the transition of the electricity sector should occur?	The WA Energy Sectors should be able to transition within 10 years if supported by a policy framework that encourage investment in low or zero carbon systems and technologies.
2. Industry innovation	What measures have been implemented by your business to lower energy use or emissions?	N/A
	What are the barriers to decoupling energy use and emissions in the resources sector?	N/A
	Have you assessed the implications of the low-carbon transition for your business or sector? How are these risks disclosed to stakeholders?	N/A
	What exemptions should apply to trade-exposed sectors in reducing our emissions?	N/A

Key Areas	Paper Questions	EIANZ Commentary
	How can the Government of Western Australia foster clean industries and technologies?	<p>WA can foster clean industries and technology through:</p> <ul style="list-style-type: none"> • The development of State policies and strategies. A good example of this was The Future Battery Industry Strategy rolled out in WA in 2019. • Continue facilitating the development of a Renewable Hydrogen Industry in Western Australia. The July 2019 release of the Renewable Hydrogen Strategy is encouraging. • Setting targets and policy frameworks that will encourage investment in low or zero carbon systems and technologies. For too long, potential investment has been discouraged by political partisanship and the absence of a strong national climate change policy framework. Existing financing and funding bodies such as ARENA and the CEFC are demonstrating that a small amount of government funding can leverage significant private funds to deliver successful abatement projects.
3. Future mobility	What are the barriers to purchasing a low-emissions vehicle for your household or business?	<p>Barriers that exist to purchasing low-emission vehicles include:</p> <ul style="list-style-type: none"> • Up front cost and battery replacement cost. • Access to charging stations for electric vehicles. • Lack of reliable information on available options. • Travel range of vehicles before a recharge is required. • Vehicle range and options.
	What can be done to facilitate the uptake of electric and other low-emission vehicles in Western Australia?	<ul style="list-style-type: none"> • Low emissions vehicles pay no or discounted rates of stamp duty (ACT & QLD) ⁶. • Hybrid and electric vehicles receive discounts on registration fees (ACT, NSW, VIC & QLD) ⁶. • Removal of subsidies that encourage dependence on fossil fuels for mobility. • Provide consumers with independent information on low emission vehicle options – for instance WA Government works with RAC to establish an information portal focusing on Low Emission Vehicles.

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	<p>How can we further encourage use of public transport and active transport, such as walking and cycling?</p>	<p>Uptake of electric and low emission vehicles may be encouraged by:</p> <ul style="list-style-type: none"> • Implementation of incentives from other states: WA Government should consider allowing public transport fares to be offset as personal tax deductions. Such incentives should also be developed in conjunction with health policies to address problems such as obesity (EIANZ NAT). • Better links between buses and trains; often bus routes take too long and don't align well with train services. • Provide more bus stop shelters; Most bus stops are out in the open, which discourages commuters in the heat of summer or on wet winter days. • Provide more car parking at train stations to increase train usage. • Improved security in car parks and on trains. • Increase health and hygiene awareness and protocols on public transport to reduce the risk of spread of infectious disease. • Improved cycling/walking infrastructure including dedicated cycling lanes and underpass facilities.
	<p>How can we ensure that Western Australia isn't left behind in the transition to cleaner transportation?</p>	<ul style="list-style-type: none"> • WA Government supports R&D into cleaner transportation for public transport. • WA Government includes requirement for low emission vehicles in their contracts. • WA Government transition all public sector vehicles to low emission vehicles by 2030 and provide incentives for government contractors to do the same.

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4. Regional prosperity	How will climate change affect your regional community?	<p>Climate change will affect regional areas through changes in rainfall, health issues, extreme weather and job losses.</p> <p>Agriculture - There is evidence that climate change is increasing the frequency of drought conditions leading to reduction in agricultural yields. Increased temperatures are placing livestock under increasing heat stress and reducing productivity rates.</p> <p>Forestry – Forestry is facing an increased risk of declining productivity and tree mortality in some regions as a result of reduced rainfall, increased temperatures, natural disasters and water loss.</p> <p>Groundwater - Many regional towns and homes are dependent on groundwater, these groundwater supplies are vulnerable to climate change, particularly those that are recharged by rainfall. There is also evidence that some coastal areas are experiencing seawater intrusion as a result of groundwater drawdown, reducing freshwater availability.</p> <p>Supply from surface and groundwater is not the only risk to our water resources. Increased extreme weather events, such as bushfires and floods, can affect water quality and water infrastructure. Increasing temperatures may increase the risk of bacterial contamination in water supplies, blue-green algal outbreaks and acid-sulphate soil issues.</p>

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	<p>What steps can we take to further enhance the resilience of our regions and our primary industries?</p>	<ul style="list-style-type: none"> • Ensure communities have access to sustainable water sources that are not rainfall dependent. • Facilitate the establishment of infrastructure that maximizes the reuse of wastewater. • Help the agricultural sector transition to new crops or livestock that are more tolerant of extreme conditions. • Work with local communities and business communities to develop climate adaption and mitigation strategies. • Help local communities implement waste minimization and recycling programs – many regional and rural communities do not have waste recycling options due to the cost of implementation. • Take a lead role in transitioning WA to a low carbon environment that provides an economic framework recognizing the carbon sequestration value of landscape. • Set up policy and regulatory measures for new development and infrastructure to: <ul style="list-style-type: none"> ○ Support minimum performance standards for carbon (and other harmful emissions) as part of sustainable development metrics. ○ Report progress of measures against carbon reduction targets across all levels of government and the business sector. ○ Embed climate risk assessment and management in planning and design as part of development and works approvals.

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	<p>How can we support the agricultural sector to participate in the low-carbon transition?</p>	<ul style="list-style-type: none"> • Additional schemes to the ERF are required to achieve the necessary emissions reductions in agriculture (Agriculture and 'land sector' annual emissions of 66MtCO₂e are significant and the claimed 144.5MtCO₂e of emission reduction contracted under ERF seems ambitious and remains to be fully realized). • Re-establish research hubs like CSIRO's Climate Adaption Flagship to evaluate emission reduction and other agricultural options. Example project-FutureFeed, a livestock feed supplement developed by CSIRO, Meat and Livestock Australian and James Cook University that utilises a specific type of seaweed, which can increase production and reduce methane emissions simultaneously⁷. • Implement a framework for establishing microgrids for remote households. • Innovative models of delivering energy to supply seasonal demands are required to ensure the productivity and competitiveness of the sector, if a meaningful transition from fossil fuels is to be achieved. • Implement the relevant components of the National Agriculture and Climate Change Action Plan, in particular: <ul style="list-style-type: none"> ○ Support research to improve understanding of the implications of climate change for agriculture at the state, sectoral and regional levels. ○ Increase resilience of farming systems and regions to climate change, and help agribusinesses identify where changes may be needed to longer-term investment strategies. ○ Enhance current programs and structures to incorporate climate change adaptation considerations into natural resource management, rural support and adjustment, research and development, plant and animal health, pest and weed policies and programs, and environmental management systems. ○ Develop decision support tools, pilot adaptation options, inform and encourage adaptation, and engage industry in participatory research, communication and review.

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	<p>What opportunities do carbon offset markets present for Western Australian land managers, including Aboriginal groups?</p>	<p>Possibilities include those seen in other states:</p> <ul style="list-style-type: none"> • NT - Aboriginal Carbon Industry Strategy to support the establishment of emissions reduction projects on Aboriginal land by developing new methods and identifying existing and creating new market opportunities for emissions reduction credits⁸. • QLD - the Aboriginal CarbonPlus Fund⁹.
	<p>What matters should the State Government take into account in developing a strategy for carbon farming in Western Australia?</p>	<p>Carbon farming can aid biodiversity protection and enhancement. The value of carbon farming may be equal or greater than some other activities in WA, although the current program suggests that carbon farming is a lesser industry. EIANZ would like to see alignment with the national approach to ensure recognition of WA programs. A good example is the QLD Land Restoration Fund.</p>
<p>5. Waste reduction</p>	<p>What areas can we target to further reduce greenhouse gas emissions from waste?</p>	<ul style="list-style-type: none"> • Assistance for regional and rural communities to establish waste minimization and recycling programs. • Support business to increase their waste minimization strategies. • Improve recycling rates and increase methane capture. • Waste reduction credits for homes and business.
	<p>What can households, businesses and government do to reduce their waste and compost more?</p>	<p>There is a need for greater application of the principles of the circular economy. This would drastically reduce our need for 'virgin' natural resources and result in a far more efficient recovery, reuse and recycling of materials, leading to reduced emissions intensity. The World Economic Forum estimates the circular economy could be worth \$1 trillion worldwide and \$26 billion in Australia by 2025¹⁰.</p>
<p>6. Safe and healthy communities</p>	<p>What are the main climate risks for your household or your community? What can be done to manage these risks?</p>	<ul style="list-style-type: none"> • Increase in frequency and severity of natural disasters; drought, fire, flood. • Prohibitive building and 'home and contents' insurance costs. One in every 19 property owners face the prospect of insurance premiums that will be effectively unaffordable by 2030 (costing 1% or more of the property value per year)¹¹ • The WA Climate Health Inquiry results should be considered.

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	What are your biggest concerns about Western Australia's future climate?	<ul style="list-style-type: none">• Biodiversity loss through lower rainfall, increased fire, spread/introduction of pest species and increases in ocean temperatures.• Reduction in quality of life due to increased cost of living and increased pressure on regional towns and cities due to migration of people from regional and rural areas to urban areas.• Increases in extreme weather events resulting in infrastructure damaged and loss of life.• Introduction and spread of disease not previously known to occur in Australia or in the southern regions of Australia.• Lack of preparedness.• Lost opportunities (economic, environmental, community) to be at the forefront of renewable energy supply.

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	<p>What could be done to ensure your community is better prepared for possible climate impacts?</p>	<ul style="list-style-type: none"> • State Government leadership (e.g. South Australia and NZ). Cease debating whether or not climate change is real and implement policies and action plans that help to move WA away from activities that result in emission of substances into the environmental that pollute or impact natural values while ensuring economic stability. • Development of State, Regional and/or local climate adaption and mitigation plans. • Implement programs that support the protection and restoration of key ecosystems such as rivers, wetlands, forests and mangroves that absorb carbon. Mangroves also serve as a barrier against tropical storms, and wetlands absorb excess water from floods - both extreme weather events exacerbated by climate change. • Support small local producers who, unlike large factory farms, employ sustainable practices, care about land restoration, benefit nearby communities, and make animals and crops more resilient to climate change. • Implement programs that support and promote green energy, 35% of all global emissions come from energy production. • Shift towards a circular economy: <ol style="list-style-type: none"> 1. Regenerate natural systems 2. Design out waste and pollution 3. Keep products and material in use
<p>7. Water security</p>	<p>What can we do to encourage Western Australians to use water more efficiently and adapt to a drying climate?</p>	<ul style="list-style-type: none"> • Continue or implement schemes that help households and business implement solutions to reduce waste usage, use recycled water or capture rainfall. • Ensure there is a cost difference between drinking water and lesser quality water to encourage industry to user recycled or lower quality water where possible. • Support R&D in low or no water technology for industry.

Key Areas	Paper Questions	EIANZ Commentary
	<p>Are there policies adopted in other jurisdictions we should consider for Western Australia?</p>	<ul style="list-style-type: none"> • Victoria: Improved greywater use particularly for residential dwellings ¹². • Adelaide: Waste water reuse ¹³. • NSW: Leak Detection. • ACT: Water Strategy 2014-2044 ¹⁴.
	<p>What are the best management options to deal with the water security implications of climate change for our agricultural sector?</p>	<ul style="list-style-type: none"> • Modernize irrigation systems that better allocate water. • The clear transmission of alerts about water scarcity to farmers. • The adaptation of both infrastructure and management to allow for more flexible and reliable delivery of water. • Water storage options - improving the capacity to store water in the soil, surface reservoirs or underground reservoirs. • Information delivery to farmers from climate analyses can be enhanced by providing projections of management and policy-relevant weather metrics. • Monitoring and evaluation systems to track changes in climate, impacts on agriculture, and the effectiveness of adaptation measures
<p>8. Livable towns and cities</p>	<p>What are the key barriers to improved energy efficiency for our built environment?</p>	<p>Barriers to retro-fitting or selecting energy efficiency initiatives include financial, institutional and administrative, awareness, advice and skills and separation of expenditure and benefit.</p>
	<p>What information or tools do you require to improve energy efficiency in your household or workplace?</p>	<ul style="list-style-type: none"> • Reliable and trusted information. • Easy and readily access able energy usage and tracking tools.
	<p>What energy efficiency standards or disclosure measures do you support for our homes and offices and the appliances we use in them?</p>	<ul style="list-style-type: none"> • QLD, NSW, VIC, SA and ACT provide or have committed to provide support for small-scale batteries through interest free loans, rebates and subsidies. ⁶ • ACT requires owners of residential properties to disclose the properties energy efficiency rating when it is advertised for sale or lease ⁶. • Any standard or disclosure measure should involve a verification process.

Key Areas	Paper Questions	EIANZ Commentary
	How do you think climate change will affect the livability of your neighborhood or region?	<ul style="list-style-type: none"> • Increase in extreme temperatures resulting in an increase electricity use. • Drier gardens and natural environment increasing fire risk. • Less water resulting in the removal of gardens which increase urban heat. • Migration of illness and disease.
	How can we improve the retention of vegetation, particularly tree canopy, in our cities and suburbs?	Support and promote Local Government projects. Example Projects include City of Joondalup's Leafy City Program. Increasing tree canopy in suburban areas ¹⁵ and City of Stirling's Urban Forest Strategy ¹⁶ .
9. Resilient infrastructure and business	What are the key climate risks for the primary industry or resources sectors?	<ul style="list-style-type: none"> • Increased risks of erosion and land degradation. • Rising water tables and reduced water quality including increased salinity. • Reduced rainfall or increased rainfall variability, reduced water available in dams, rivers and groundwater. • Decreases in productive land available. • Changed climate conditions will also alter the spread and impact of weeds, pests, diseases and predators.
	Do you currently assess the impact of physical climate risks on your business, assets or infrastructure?	N/A
	Is there information which would assist you to do this better?	N/A

Key Areas	Paper Questions	EIANZ Commentary
	<p>What are the best ways to enhance the resilience of public and private infrastructure?</p>	<ul style="list-style-type: none"> • A resilience approach to managing the risks to critical infrastructure encourages organisations to develop a more organic capacity to deal with rapid-onset shock. • Enabling climate resilience through policy and regulation - Public policy and regulation play a key role in enabling and promoting climate-resilient infrastructure development. • Facilitating climate risk disclosure - Increased public disclosure of climate risks can support infrastructure resilience by informing investment decisions. • Mainstreaming resilience into infrastructure pipelines and pathways - It will be essential to mainstream climate resilience, in a proportionate way, throughout the full pipeline of projects to ensure that they are consistent with future climate change scenarios. • Ensuring that public procurement accounts for the benefits of climate resilience.
<p>10. Protecting biodiversity</p>	<p>Can existing land use and biodiversity management practices be modified to reduce vulnerability and improve resilience?</p>	<ul style="list-style-type: none"> • Manage through development of a state biodiversity strategy. • Reinitiate State of the Environment reporting for improved information for decision making in biodiversity management. • Continue the development of a state native vegetation policy.
	<p>Are there opportunities for new collaborations with landholders or communities to address climate risks and improve biodiversity outcomes?</p>	<ul style="list-style-type: none"> • Defining landholder duty of care for government managed, leasehold and freehold lands to enable better targeting of investment for conservation activity. • Effective market-based mechanisms to deliver biodiversity conservation that encourage landholder to protect intact vegetation and undertake restoration.
<p>11. Strengthening adaptive capacity</p>	<p>Are there gaps in the availability of adaptation knowledge, climate information or skills for your community, organisation or sector?</p>	<p>How to include climate change risk assessment in strategic decision making and long-term planning, particularly for infrastructure and land use.</p>
	<p>How can these be addressed?</p>	<p>Consistent State of the Environment reporting.</p>

Key Areas	Paper Questions	EIANZ Commentary
	What are the main barriers to the adoption of effective climate change adaptation?	<ul style="list-style-type: none"> • Absence of a clear State and National policy framework around climate change, it's impacts and mitigation strategies. • Climate change scepticism - Lack of education around climate change. • Absence of climate change considerations into legislations that directly relates to land use planning and approvals.

¹ <https://www.eianz.org/document/item/2718>

² <https://www.eianz.org/document/item/3692>

³ <https://www.eianz.org/eianznews/environment-institute-calls-for-more-action-on-climate-change-and-stronger-national-environmental-laws>

⁴ <https://www.eianz.org/eianznews/eianz-calls-for-government-commitment-to-action-on-climate-issues>

⁵ <https://www.tai.org.au/sites/default/files/Climate%20of%20the%20Nation%202019%20%5BWEB%5D.pdf>

⁶ <http://climatechangeauthority.gov.au/sites/prod.climatechangeauthority.gov.au/files/Australian%20climate%20change%20policies%20-%20stocktake.pdf>

⁷ <https://research.csiro.au/futurefeed/>

⁸ <https://denr.nt.gov.au/bushfire-information-and-management/publications-and-other-resources/aboriginal-carbon-industry-strategy>

⁹ <https://www.qld.gov.au/environment/climate/climate-change/carbon-farming>

¹⁰ http://www3.weforum.org/docs/WEF_ENV_TowardsCircularEconomy_Report_2014.pdf

¹¹ <https://www.climatecouncil.org.au/resources/compound-costs-how-climate-change-damages-australias-economy/>

¹² <https://www.sustainability.vic.gov.au/You-and-your-home/Live-sustainably/Save-water>

¹³ <https://www.sawater.com.au/community-and-environment/our-water-and-sewerage-systems/recycled-water>

¹⁴ https://www.environment.act.gov.au/_data/assets/pdf_file/0003/621471/ACT-Water-Strategy-Factsheet_ACCESS.pdf

¹⁵ <https://www.joondalup.wa.gov.au/kb/resident/the-leafy-city-program>

¹⁶ <https://www.stirling.wa.gov.au/recreation/parks-and-reserves/pages/urban-forest-strategy>