

Our Ref: 81812696

29 November 2019

Mr Mike Rowe
Director General
Department of Water and Environmental Regulation
Locked Bag 10,
JOONDALUP DC WA 6919

Dear Mr Rowe,

CLIMATE CHANGE IN WESTERN AUSTRALIA – ISSUES PAPER

Thank you for the opportunity to comment on the Department of Water and Environmental Regulation's (DWER) Climate Change in WA Issues Paper (Issues Paper). I would like to acknowledge the efforts that the State Government is already undertaking to address climate change, and its intent to develop the State Climate Policy.

Water Corporation (the Corporation) recognises the challenges and concerns associated with a changing climate, and the need for an economy-wide approach in WA to reduce greenhouse gas (GHG) emissions to net-zero by 2050. We also recognise our part in, and necessary contribution to, the State's efforts to mitigate and adapt to the impacts of climate change.

The Corporation has many relevant initiatives underway, with a particular focus on our core business of ensuring safe and reliable water, sewerage and drainage services across the state. As part of our Corporate Strategy, we are looking at ways to reduce GHG emissions across our operations, which will contribute to the State net-zero target.

In response to the eleven themes outlined in the Issues Paper, we have included both recommendations for the future policy, as well as the Corporation's current undertakings to mitigate and adapt to climate change impacts.

1. Transforming Energy Generation

Energy transformation will be critical to reducing economy-wide emissions from the use of non-renewable grid electricity in WA. In this context, the Corporation supports the Government's Energy Transformation Strategy (the Strategy) mentioned in the Issues Paper and continues to engage with Energy Policy WA on the delivery of the Strategy.

The Strategy notes that 16% of electricity supply in the South West Interconnected System is currently supplied by renewable energy sources, which are expected to account for over one-third of annual electricity generation in the system by 2030. Approximately 90% of the Corporation's emissions come from the purchase of electricity – or 'Scope 2' emissions. We also purchase approximately 20% of our energy from clean sources including wind and solar generators, and self-generate a small portion from biogas. In this context, energy generation reform will have a direct impact on our emissions.

From our perspective, the main challenges to be addressed for decarbonising the State's electricity supply include:

- the need for electricity market structures that enable economically efficient renewable energy sources;
- the intermittency of current mainstream renewable energy sources, limiting our ability to depend on it for base load power; and
- technological constraints on the large-scale storage of energy.

2. Industry Innovation

The Corporation supports the Government's Renewable Hydrogen Strategy mentioned in the Issues Paper. Through an innovative collaboration with the private sector, we are collaborating on a commercial demonstration plant to utilise the methane in biogas produced at our Woodman Point Wastewater Treatment Plant. The plant will convert the methane into hydrogen as a cleaner energy source, and graphite for industrial use.

We are exploring opportunities in WA, in partnership with the private sector, to use solar power in the production of hydrogen from water. State and Federal Government funding opportunities will continue to be important incentives to support the development of a local renewable hydrogen industry.

We are also exploring actions to lower energy use in our operations, which will help contribute to lower emissions and generate operating efficiency savings. Long term energy efficiency targets within our business are being developed to drive internal innovation.

3. Future Mobility

METRONET is recognised by the Corporation as a key planning and development strategy of government that reduces a growing population's contribution to GHG emissions. The public transit expansion of METRONET will directly reduce transport emissions, and more efficiently move people around the Perth and Peel regions. We are collaborating with government and property developers to provide reliable water, wastewater and drainage services to the expected 45% increase in new homes, near public transit, in the Perth and Peel region by 2031.

Deconstructing our emissions profile identifies that emissions from our fleet are relatively low compared to emissions from our energy use. For this reason, targeting our energy use will drive the best performance outcomes for our business.

We will also continue to support the efforts of the State Government's Electric Vehicle Working Group, and the development of an Electric Vehicle Strategy for WA. We are exploring opportunities to bring hybrid and electric vehicles into our passenger fleet.

The Corporation also owns approximately 1,000 commercial vehicles across the State, the majority of which are fit-for-purpose. The biggest barrier to moving these fit-for-purpose vehicles to hybrid or electric is their cost. Secondly, there is no developed second-hand market for such vehicles to be on-sold, which adds to cost constraints.

4. Regional Prosperity

Water supply

Water Corporation's primary contribution to regional prosperity is the continued supply of essential water services to communities, industry and customers. Climate change is the primary driver impacting our risk of water supply shortages. We have spent the last decade diversifying water sources for the Integrated Water Supply Scheme to remove our dependence on rainfall into dams, and there will be increasing pressures for access to groundwater resources in the metropolitan and regional areas.

To support regional prosperity, the need for robust water resource management legislation will be essential to having well-governed water resources. In particular, this could help achieve balanced allocations of scarce water resources for the environment, lifestyles, agriculture and industry. For many of our communities, we rely on access to finite water resources where there may be no other cost-effective water source options. Maintaining this balance is critical for the prosperity of our communities.

We anticipate continued investments to mitigate water source constraints in the next 5-10 years. To reduce our expenditure, we view demand management and water efficiency measures seriously. We believe these practices should be adopted by all other self-supplied water users.

Water Corporation is an active supporter of the circular economy and encourages the use of non-traditional water supplies by recovering water from our wastewater treatment plants for reuse, where it is sustainable. We already supply 69 non-drinking water schemes with treated wastewater, mostly in regional areas of the state, providing water for public open space, schools and golf courses.

Land use for offsets

The Corporation is the largest non-traditional manager of land in the State. There is an opportunity for us to participate in carbon farming projects with the Department of Planning Lands and Heritage on land within our portfolio.

We believe that the supply and use of carbon offsets generated in WA may have substantial benefits for the State, and recommend to consider developing a carbon offset strategy. We also believe any future offsets policy should consider alignment of the carbon accounting approach with the nationally accepted regulatory systems, including the Emissions Reduction Fund and the National Greenhouse and Energy Reporting System. In particular, as this relates to revegetation and ecosystem assessment of the carbon content of vegetation.

5. Waste Reduction

In the area of waste reduction, we have adopted the targets of the State's Waste Avoidance and Resource Recovery Strategy, and are developing our own internal waste avoidance strategy. Our principal aims are to reduce waste to landfill (particularly organic waste and its associated methane emissions); increase resource recovery and material reuse in our office management, construction projects and from bio-solids; and increase our recovery of water from waste streams.

The Corporation will also look to reduce or capture its wastewater treatment plant emissions where possible. In particular, we are currently capturing methane to generate electricity from biogas at our Woodman Point Wastewater Treatment Plant; and installing new generators to produce electricity and heat from methane captured at Beenyup WWTP. We are exploring opportunities to convert biogas to renewable hydrogen where feasible. In addition, each year the Corporation's wastewater and water treatment plants generate approximately 150,000 tonnes of bio-solids and sludges. Over 90% of these materials are reused, primarily in agriculture to improve soil structure and nutrition.

We are developing a waste strategy that will enable better and more transparent measurement of the Corporation's waste creation, and hence better recovery and avoidance. This will eventually lead to improved waste management and avoidance strategies, which should also reduce costs.

The Corporation is aware that DWER is exploring legislative reforms to support the use of waste derived materials in a move towards a circular economy in WA. We support policy outcomes which would simplify the consideration and management of solid wastes, and appropriate liquid wastes, as a resource in WA.

6. Safe and Healthy Communities

We are committed to delivering safe drinking water to maintain public health in accordance with the principles within the Australian Drinking Water Guidelines, and ensuring we remain resilient to the potential climate change impacts on water quality. We operate over 250 drinking water schemes across the State, with robust multiple barriers to manage microbiological and chemical challenges identified through our continuous risk management processes.

In regional WA, we are working with State Government agencies to deliver safe and secure drinking water to remote Aboriginal communities. As the Corporation develops its infrastructure and becomes the provider of drinking water and wastewater services to these communities, it is expected that Aboriginal health outcomes will be advanced.

In a recent submission to the Department of Health 'Inquiry into Climate Change and Health' the Corporation also identified four key pathways to improve community health including more active recreation, more exposure to greenspace, reduced temperatures from Urban Heat Islands and lower air pollution.

7. Water Security

Persistent climate change in the south west of Western Australia is the most significant challenge that the Corporation and the State's water resource regulators have faced. For example, streamflow into dams has reduced from an average of 420 billion litres per year, pre-1975, to an average of 72 billion litres over the past five years, representing an 83% reduction in average streamflow. Although there are other contributing factors (such as composition of catchment vegetation), we consider climate change to be among the key reasons behind this trend.

It is projected that winter rainfall will decrease by up to a further 15% by 2030. Average temperatures are also predicted to increase in all seasons. The reduction in rainfall is a key contributor to declining groundwater levels on much of the Swan Coastal Plain. The challenge facing Perth is not only reducing reliance on inflow to dams, but the potential significant reductions in groundwater availability and allocations for both public and private water users.

Some key projects and initiatives that the Corporation has developed to meet these challenges include:

- our ongoing work with regulators to demonstrate health and environmental compliance with our Groundwater Replenishment Scheme (GWRS) – an Australian first technology of this kind;
- the integration of two desalination plants delivering safe drinking water into our Perth and South-West schemes;
- 76 recycling schemes across the state supplying recycled water for industrial reuse and irrigation of public open spaces;
- working with the community to reduce water use; and
- catchment management.

We are also progressively shifting groundwater abstraction to minimise the environmental impact. WA has had the historical benefit of incorporating soak-wells into the household drainage, which is a significant local source of groundwater replenishment. Similarly, compensating basins incorporated into parks and open space have helped stormwater to soak back into the ground and recharge our underwater aquifers.

We believe that continued community engagement and collaboration across all relevant stakeholders is required to find innovative solutions to emerging water challenges, balance supply and demand in the total water cycle, and develop an urban form that is in harmony with, and enhanced by, its water environment.

8. Liveable Towns and Cities

As the principal provider of water, wastewater and drainage services in Western Australia, the Corporation contributes significantly to liveability outcomes. This includes broader community benefits in relation to water security, flood risk, biodiversity, public open space, healthy waterways and productive and connected communities.

We are also a fully supportive contributor and enabler of the Government's Waterwise Perth Action Plan (the Plan). The Plan includes specific actions for Water Corporation to deliver towards Perth's transition to be a leading waterwise city by 2030, and as a result a more liveable city in a changing climate. From a drainage and liveability perspective, we are focused on increasing community access to green spaces around drains and basins. Leveraging partnerships to develop spaces that deliver multiple benefits to the community such as aesthetics, habitat, greening and urban cooling, is a cost-effective way to contribute to the liveability of our towns and cities in a changing climate.

As the Corporation's buildings age, necessary renovations and new builds are obligated to meet the latest standards of the building code including any required adaptive measures that may relate to the impacts of climate change. As an example, the Corporation's Head Office building in Leederville is over 40 years old. However, it is rated NABERS 4 Star as well as a Gold Waterwise building which reflects our own efforts in being both waterwise and energy efficient. Scheduled renovations and upgrades over time will provide a cost-effective opportunity to enhance the energy and water efficiency across our properties.

9. Resilient Infrastructure and Business

An increase in climate-related extreme events poses a potential risk for the Corporation, and it is important that we develop our resilience in the face of such events. For example, we currently assess the impact of bushfire on our assets, and develop prevention activities accordingly. We also have Operational Contingency Plans in place to enable our assets to respond to bushfire outages efficiently. These Contingency Plans will need to be improved to respond to other natural hazards such as increased risk of cyclones and flood events impacting our infrastructure.

In relation to our property portfolio and associated climate change risks, the Corporation is guided by the Western Australian Planning Commission's (WAPC) policies regarding sea level rise. This includes setbacks from the coast under the WAPC Coastal Planning Policy SPP 2.6. Adopting a more holistic approach to climate resilience is an increasing focus across the Corporation.

The Department of Fire and Emergency Services has prepared a decision support tool that provides information for long term risk reduction planning in the area of natural hazards with funding gained from the National Disaster Resilience Program. The Corporation aims to use this tool for scenario modelling of regions susceptible to natural hazards. Using the latest science and technology to apply prevention activities and ensuring the necessary resources are provided, will enable the Corporation's asset managers to respond quickly and efficiently to an increased frequency of severe weather events.

10. Protecting Biodiversity

The Corporation has adopted a policy of no net clearing of native vegetation. This will involve offsets of biodiverse revegetation, generally in the same bio-region as where any clearing may be necessary. This may also provide for some carbon offsets towards the reduction of our net GHG emissions.

We are also in the initial stages of developing a biodiversity management plan which will unite all of our existing programs that protect biodiversity such as pest and weed management, access control, fire management and catchment management across our land holdings. Our biodiversity plan will identify gaps in the current management regime that require further action.

Through these programs there are many opportunities for collaboration with landholders in regional areas including for carbon farming. However, as carbon offsetting through biodiverse revegetation increases, the State may require an overall strategy for revegetating lands under its control, or actions by its agencies on other lands, to prevent artificial shortages or competition for land creating unintended consequences.

11. Strengthening Adaptive Capacity

We are continuing to adapt to climate change, with a direct impact on our demand and supply balance in Perth and the South West land division. Ongoing water efficiency programs, network optimisation and use of alternative water sources are essential components of our investment strategy to address this risk. We are working closely with DWER to ensure our growth and climate impact projections are aligned for key publications.

It will also be important to continue data sharing with other agencies. The Corporation has access to excellent climate data, but two-way sharing with leading research organisations such as the CSIRO, our regulator DWER, and others will support adaptation knowledge and data gaps.

Finally, we are interested to bring our customers and the community along on our journey to adapt to and mitigate our collective impact on our water resources in a drying climate. Our 'Climate Change is Real' public advertising campaign aims to educate our customers on the values of conserving our groundwater resources for future generations while protecting our unique biodiversity and wetlands.

My colleagues and I look forward to further collaboration with Government on development of the State Climate Policy. We would be pleased to hold additional discussions on climate change related matters to contribute to policy, mitigation and adaptation solutions.



Yours sincerely
Pat Donovan
Chief Executive Officer

CC: Minister for Water, Hon Dave Kelly MLA, Minister for Water

