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Submitted via email: climatechange@dpac.tas.gov.au

To whom it may concern,

RE: ClimateWorks input to the consultation on Tasmania's next climate change action plan

ClimateWorks Australia welcomes the opportunity to provide input to the consultation process for Tasmania's next climate change action plan. ClimateWorks develops expert, independent solutions to assist the transition to net zero emissions for Australia, South-east Asia and the Pacific. A non-profit organisation, it was co-founded in 2009 by The Myer Foundation and Monash University and works within Monash Sustainable Development Institute.

Tasmania is unique in having already achieved net zero emissions and net 100 per cent renewable electricity. The State has the opportunity to use these achievements as a foundation for further world-leading action through its next climate change action plan. This would include actions that preserve and grow Tasmania's nature-based carbon sinks; that establish low carbon industries for exports; and that address the sectors of the economy that currently have positive emissions.

For the sectors with positive emissions, current government policy is not aligned to a 1.5 or well under 2 degree pathway for Australia. Australia needs to be at net zero by the mid 2030s in order to be aligned to 1.5 degrees, and Tasmania has a role to play in contributing negative emissions to this task. Furthermore, given its potential in the energy and land sectors, Tasmania is not making the most of emissions reductions opportunities and the economic and other benefits these can bring. This however can be turned around through a focus on policies that drive electrification, energy efficiency and solutions to reduce non-energy emissions.

Our responses to the questions in the Discussion Paper related to greenhouse gas emissions are set out overleaf. We have not responded to the three questions related to Tasmania's adaptation to a changing climate. This reflects ClimateWorks' expertise and knowledge base. Thank you for taking the time to consider our submission. We would welcome an opportunity to brief your team if you would like to explore our responses in further detail.

Yours sincerely,

Anna Malos
Australia - Country Lead

Simon Graham
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MONASH
University

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SUSTAINABLE
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THE MYER
FOUNDATION

Since ClimateWorks' launch in 2009 through a partnership between The Myer Foundation and Monash University, philanthropic support has been key to achieving our mission of catalysing Australia's transition to a prosperous, net zero emissions future. This support continues to allow us to remain truly independent, evidence-based and non-partisan.

1. What do you think are the key opportunities to reduce Tasmania's emissions? Please choose your top three.

Energy efficiency

While Tasmania has achieved 100 per cent renewable electricity, there are significant benefits to improving energy efficiency. Doing so would allow for increased electrification in buildings and other sectors without placing increased demand on the grid. It would also allow Tasmania to export a higher share of the renewable electricity it generates. There are also benefits in terms of improved energy bills, health outcomes, productivity and energy security (Energy Efficiency Council 2017).

In scenarios aligned to 2 degrees of warming modelled by ClimateWorks (2020), the energy performance of residential buildings in Australia improve by 44-48 per cent between 2020 and 2030, and for commercial buildings the improvement is between 16 per cent and 25 per cent. In a scenario aligned to 1.5 degrees of warming, these improvements are 49 per cent and 28 per cent, respectively.

In scenarios aligned to 2 degrees of warming, the energy intensity of industrial activity improves by 16-18 per cent between 2020 and 2030, and agricultural energy intensity improves by 21-22 per cent. In the scenario aligned to 1.5 degrees of warming, these improvements are 19 per cent and 22 per cent, respectively.

Electrification

Due to Tasmania's abundant renewable electricity resources, electrification across the economy will drive greater emissions reductions than it would in jurisdictions where electricity is not yet renewably sourced. There are also benefits in terms of improved energy bills and health outcomes (Climate Council 2021).

In scenarios modelled by ClimateWorks (2020) aligned to 2 degrees of warming, the electricity share of Tasmanian energy use in residential buildings increases from 60 per cent in 2020 to between 77 per cent and 81 per cent by 2030. In the same scenarios, Australia-wide electricity increases from 19 per cent to 22 per cent of total energy use in industry this decade, and from 8 per cent to 24 per cent in agricultural energy use.

In transport, electric vehicles represent one in two new light vehicle sales by 2030 in scenarios aligned to 2 degrees of warming, and 76 per cent in the scenario aligned to 1.5 degrees. For Tasmania this translates to between 64,000 and 120,000 electric vehicles on the road by 2030. Electric vehicles also improve noise and air pollution, and can be integrated with the electricity grid as storage.

Combining this electrification with on-site renewables where possible - such as through solar

photovoltaic uptake in homes, transport depots, and industrial facilities - will further contribute to Tasmania's position as a renewable electricity leader. On-site renewable generation, alongside increased build out of large scale renewable generation assets, will increase Tasmania's potential exports of renewable electricity (see response to Question 3).

Reducing non-energy emissions

Non-energy emissions from agriculture, industrial processes and product use, and waste accounted for 4.36 Mt CO₂e in Tasmania in 2018 (Tasmanian Climate Change Office 2021). In aggregate, this is more than Tasmania's emissions from energy use.

The solutions available to address non-energy emissions vary substantially in their degree of technological and commercial readiness (ClimateWorks 2020). Increased research, development and demonstration is needed now for many solutions if they are to effectively reduce emissions in the medium-to-long term. Key solutions requiring further research, development and demonstration include:

- Agriculture: zero emissions meat and dairy solutions e.g. anti-methane vaccines
- Industry: inert anode technology for aluminium production, zero carbon refrigerant alternatives, renewable hydrogen, carbon capture and storage, and geopolymers cement

Solutions for non-energy emissions that are mature and deployable now include:

- Agriculture: efficient, sustainable and regenerative practices such as precision agriculture and fertiliser management; efficient livestock practices such as manure management
- Industry: increased circular economy practices; improved monitoring, equipment upgrades and other methods to reduce fugitive gas emissions; catalysts in nitric acid production
- Waste: circular economy practices; methane capture and waste-to-energy facilities for organic waste and waste water

In scenarios aligned to 2 degrees of warming modelled by ClimateWorks (2020) there are the following reductions in non-energy emissions Australia-wide by 2030:

- Agriculture: 30-73 per cent reduction in sheep and cattle methane emissions intensity
- Industry: 40-43 per cent decrease in industrial non-energy emissions (including a 32-35 per cent decrease in aluminium production non-energy emissions, a 23-37 per cent decrease in cement production non-energy emissions, and a 50 per cent decrease in refrigerant emissions)
- Waste: 72 per cent decrease in waste emissions, 53-59 per cent decrease in water supply emissions

In a scenario aligned to 1.5 degrees of warming, reductions are:

- Agriculture: 73 per cent reduction in sheep and cattle methane emissions intensity
- Industry: 49 per cent decrease in industrial non-energy emissions (including a 34 per cent decrease in aluminium production non-energy emissions, a 70 per cent decrease in cement production non-energy emissions, and a 50 per cent decrease in refrigerant emissions)
- Waste: 72 per cent decrease in waste emissions, 65 per cent decrease in water supply emissions

The opportunities identified for industry in these Australia-wide scenarios suggest the importance of transitions at the same scale for Tasmania's industrial facilities such as the Railton cement works and the Bell Bay aluminium smelter.

ClimateWorks, in partnership with Climate-KIC Australia, is currently convening the [Australian Industry Energy Transitions Initiative](#), which is supporting Australian industry to develop pathways and take action toward net zero emissions in steel, aluminium, liquified natural gas, selected metals and chemical supply chains.

2. What do you think are the key gaps in Tasmania's current efforts to reduce emissions?

Current Tasmanian policies for transport, buildings, industry and agriculture will be insufficient in achieving the emissions reductions and energy savings referenced in response to Question 1. This means that Tasmania is not unlocking all of the available emissions reduction opportunities, nor is it capitalising on the new economic opportunities of a global transition to net zero emissions. Tasmanian policy also currently does not clearly support preserving and further developing the State's land-based carbon sinks.

Transport

While Tasmania's target of a 100 per cent government vehicle fleet is ambitious, there is currently a lack of sufficient policies to drive electric vehicle uptake in business fleets and in the broader community at the scale referenced in response to Question 1 (between 64,000 and 120,000 electric vehicles on the road by 2030). Policies that may increase uptake include registration and stamp duty waivers, direct subsidies, and further support for charging infrastructure rollouts.

Tasmania also currently does not have any policies to address freight transport emissions, which were over 0.6 Mt CO₂e in 2018 (Australian Government 2021). Nor does Tasmania have sufficient policies to drive increased uptake of public transport and active transport modes. Tasmania can also transition its bus fleet to electric this decade. New South Wales (2020) has committed to transition its entire bus fleet to electric, and Victoria (2021) is targeting all public

bus purchases to be zero emissions vehicles from 2025.

Buildings

As referenced in response to Question 1, there is substantial opportunity to electrify Tasmania's residential and commercial buildings and improve their energy efficiency.

These opportunities could be captured by an economy-wide energy efficiency program, such as the retailer schemes in South Australia, New South Wales, Victoria and the ACT. Tasmania can also build upon and scale up existing policies that target energy efficiency and electrification, such as the funding for public housing heating and energy efficiency improvements.

Furthermore, there are no current policies incentivising on-site renewable generation in Tasmania. Increased on-site output would reduce demand from large-scale generation assets. In scenarios modelled by ClimateWorks (2020) that are aligned to 2 degrees of warming, there is a 75-86 per cent increase in rooftop solar output from residential and commercial buildings in Tasmania between 2020 and 2030. In a scenario aligned to 1.5 degrees of warming, the increase is also 86 per cent.

Industry

There are currently insufficient policies in Tasmania to incentivise electrification and the uptake of zero emissions fuels for process heat. There are also insufficient policies to reduce non-energy emissions from industrial processes and product use, which account for 21 per cent of Tasmania's emissions (Tasmanian Climate Change Office 2021). Tasmania's new Emissions Reduction Loan Scheme will assist in reducing these emissions sources, but this will need to be scaled up to deliver the emissions reductions available.

There is also a substantial opportunity for Tasmania to establish Renewable Energy Industrial Precincts (REIPs) due to the state's abundant renewable electricity. REIPs are clusters of manufacturers powered by 100% renewable energy. These precincts are either located within Renewable Energy Zones (such as the identified in Tasmania as part of the Australian Electricity Market Operator's *2020 Integrated Systems Plan*) or connected to renewable energy generation through high voltage transmission lines. They may also have access to clean heat and renewable hydrogen, as well as infrastructure such as port, rail and road logistics, water and recycling.

Bell Bay is already acknowledged as an industrial precinct (Regional Development Australia - Tasmania 2021) and is powered by renewable electricity. The Tasmanian government could build on this foundation, and the progress of the Tasmanian Renewable Hydrogen Action Plan and the Memorandum of Understanding signed between the Tasmanian Government and Woodside for the H2TAS project, to further develop Bell Bay as a REIP. REIPs can support the transition away from natural gas in industry, while lifting productivity and promoting

sustainable manufacturing. REIPs can attract new businesses and investment to regions, scale up and create new jobs in emerging low carbon industries, and help carbon intensive industries capture the benefits of cheaper renewable energy.

Agriculture

The Tasmanian Government's *Competitiveness of Tasmanian agriculture for 2050 - white paper* recognises the need to reduce agricultural emissions in Tasmania. However, there are currently no policies supporting the reduction of livestock emissions, which account for the majority of agricultural emissions. One of the primary solutions being explored to address livestock emissions is methane-reducing seaweed feeds, with one company, Sea Forest, planning to expand commercial production of the seaweed in Tasmania. Sea Forest has received funding from the Federal Government and red seaweed has the potential to generate a new low carbon export for the State.

Further policy is also needed to reduce other non-energy emissions, while an extension and scaling of the On-farm Energy Audit and Capital Grant Program will support improvements in energy efficiency and electrification.

Tasmania also has the potential to showcase and support low emissions agriculture from a holistic perspective. For example, Western Australia has committed in their Climate Policy (2020) to a carbon neutral agriculture demonstration project and certification scheme

Land use, land use change and forestry

Tasmania's current net zero emissions status is dependent on substantial negative emissions from Land use, land use change and forestry. Despite this, Tasmania does not currently have a clear strategy or explicit target for preserving or growing this carbon sink.

Tasmania's nature-based carbon sinks can be preserved through improved land management, the restoration of natural ecosystems, which includes restrictions on forest conversion and native forest logging. Tasmania can also develop carbon forestry efforts at scale, and explore Tasmania's options for blue carbon sequestration.

3. What do you think are the main opportunities for Tasmania to transition to a low carbon economy?

Renewable electricity exports

Tasmania has legislated a target of 200 per cent renewable electricity by 2040. The proposed Battery of the Nation Plan and Project Marinus will support this target. As the government recognises, Tasmania has excellent renewable energy resources - particularly in on- and off-shore wind and - has a role in supporting the rest of Australia to shift to clean energy. The

electricity generated in Tasmania in excess of its domestic needs will be exported, providing economic benefits to Tasmania. These exports will be further bolstered by energy efficiency and on-site renewable generation measures in Tasmania (as referenced in responses to Questions 1 and 2). This will increase the share of electricity generated by grid-scale assets that can be exported.

Renewable hydrogen and other low/zero carbon industries

Due to Tasmania's abundance of renewable electricity, it has the potential to develop low/zero carbon industries powered by this electricity. Renewable hydrogen has the potential to be a \$1.7b industry in Australia by 2030, but under existing initiatives Australia is on track to produce only a fraction of its potential market (ACIL Allen Consulting 2018).

Renewable electricity and renewable hydrogen could further be used to 'green' existing industries such as aluminium, iron and steel production through Renewable Energy Industrial Precincts (REIPs), for example in Bell Bay. As outlined in our response to Question 2, REIPs can attract new businesses and investment to regions, scale up and create new jobs in emerging low carbon industries, and help carbon intensive industries capture the benefits of cheaper renewable energy.

Initial progress has been made developing these industries, for example through Tasmanian Renewable Hydrogen Action Plan and the Memorandum of Understanding signed between the Tasmanian Government and Woodside for the H2TAS project in Bell Bay (Woodside 2021).

Land-based carbon offsets

Tasmania's negative land use, land use change and forestry (LULUCF) emissions should not be overly relied upon to offset residual emissions from other sectors. Nature-based carbon sinks are vulnerable to increasingly extreme weather like bushfires and storms. A decreased reliance on offsetting Tasmania's residual emissions would also increase potential economic opportunities for Tasmania in future offset markets as other jurisdictions seek to meet their emissions commitments through the purchase of offsets.

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