

Submission on the Draft Bill to Amend the *Climate Change (State Action) Act 2008*

Urgency

“As the United Nations’ Secretary-General has repeatedly warned, the world is in a climate emergency. The window for action is closing, with recent research suggesting climate tipping points may be reached very soon. The Bureau of Meteorology recently gave evidence to the Australian Parliament that the country is on track for 4.4°C of warming this century¹, making much of the country uninhabitable. This would be devastating for Australia’s society, economy, health, and environment.

To address this situation, countries from around the world signed up to the 2015 Paris Agreement. This commits countries to keeping global temperature rise to within 2°C above pre-industrial levels, and strives to limit warming to 1.5°C; as this will make the worst impacts of climate change less catastrophic. In practical terms, this means Australia’s GHG emissions need to peak in the very near future and reach net zero by 2035² to be 1.5°C compatible, or by 2050 to be 2°C compatible. (Quoting the first two paragraphs from the *Emissions Pathway Review Summary Report*, Point Advisory 2021, prepared for the Tasmanian Government)

These opening paragraphs in this report to the Tasmanian Government recognise that we are in a Climate Emergency and highlight the requirement for urgent action by governments at state, national and global scales, if the world is to avoid tipping points that could thrust the world into a climate catastrophe.

The Tasmanian Government need to seriously consider this question – have we done enough to meet our duty of care to protect our people and the environment on which we all depend? Have we done enough to support Australia’s transition to Net Zero carbon emissions and beyond to Net Negative emissions as urgently as required?

I would argue that the current climate change actions as proposed do not pass this threshold.

Context

Tasmania is in the very fortunate position of being a mountainous island in a high rainfall location, with reliable wind resources and supporting a relatively low population with a relatively high standard of living. It has enabled us to produce the vast majority of our electrical energy requirements from renewable Hydro energy, with the potential to tap into high quality wind resources and (rooftop and commercial) largely untapped solar energy to increase our clean energy generation to provide for our entire energy needs with capacity to export surplus energy.

We have at present a very large natural carbon sink associated with regenerating native forests recovering from logging, which in combination with the above clean energy resources, has meant that Tasmania has been Net Carbon Negative for the past 7 years.

This puts Tasmania in a very privileged position globally, with the opportunity to be a world leading clean energy economy. In a climate emergency this standing, if supported by genuine efforts to rapidly reduce our current sources of carbon emissions, presents great potential to build on our Clean Green brand, but it must involve genuine action to be sustainable.

I would argue that above and beyond Tasmania’s own emissions, we have an obligation to support Australia’s climate change efforts by reducing our emissions as fast as we can, and potentially exporting clean energy, where it is compatible with maintaining Tasmania’s environment.

Scope of Approach

Science has recognised the heat trapping qualities of Carbon Dioxide for well over a century. Scientists have been raising the alarm about the build-up of Carbon Dioxide and other Greenhouse Gases in the atmosphere as a result of the extraction and burning of fossil fuels for more than 40 years. Major oil companies have undertaken their own scientific research in the 1970's and 1980's that confirmed the threat of global warming, but lobbying, misinformation and government inertia has to date prevented action to address the now existential threat at sufficient scale.

Climate change is a wicked problem in that it is a progressive, cumulative threat that has built up over decades, and to many in the population the impact has been masked by the short sharp changes in weather and short-term climatic cycles. This has made taking effective action susceptible to false arguments by political opposition and vested interest.

After 4 decades of lost time, urgent action is required and there is no time to be lost because of ideological or political battles. To be effective, climate action needs to be taken with urgency to reflect the global emergency, but with a view to providing for long-term strategic planning and action. One weakness of democratic government is that short-term political imperatives can get in the way of sustained strategic long-term actions, particularly if the benefits depend on effective action at a global scale.

Action to address climate change requires stable, but adaptive decision-making at multi-decadal time scales. To achieve this, I suggest that a new mechanism of approach is needed that engages at a 'Whole of Parliament' level, and includes a deliberative mechanism to engage, inform and bring along the broader society. Actions must, as has been recognised in the reports, advance social justice and disadvantage.

Actions must be coordinated by an independent statutory body, with secure long-term funding, that is informed by and makes decisions based on the best available science, and reports to Parliament.

Ambition – Target Options for Tasmania

“With its significant forest estate and low carbon electricity sector, Tasmania is well placed amongst Australian states and territories to achieve net zero emissions at a relatively low cost.” (Quote from the opening sentence of section 7.3 Target Options for Tasmania, Tasmania's Emissions Pathway Review – Technical Report 2021).

In fact, economic analysis indicates that the reference case options will deliver a net economic advantage to Tasmania over the 'Business as Usual' scenario. ***“The analysis showed that the transition to a net zero carbon economy could deliver economic benefits across all sectors of the Tasmanian economy, including an increase in real Gross State Product (GSP) relative to a basecase.”*** (2021 Economic Analysis – Emissions Pathway Review – Final Report, Victoria University).

As indicated above Tasmania has achieved significant **net negative emissions** for the past 7 years. **That is Tasmania has already surpassed net zero, and is overall drawing down carbon dioxide from the atmosphere, and has been reliably doing so for the past 7 years**, thanks largely to the reduction in native forest logging. Regenerating native forest will continue (subject only to the risk of very extensive wildfire) to draw down large quantities of carbon from the atmosphere until well beyond 2050 (the limit of the modelling).

The 65% reduction in native forest logging between 2007 and 2012 that enabled Tasmania to achieve net negative carbon emissions was achieved without significant economic disruption to the overall state economy (See Fig 3 Changes in Tasmanian emissions and real Gross State Product 1990-2019 _ Tasmanian Government Response 2021)

So if we have surpassed Net Zero Emissions for some years already, without yet making major initiatives in tackling carbon emissions across the multiple sectors of the economy, why is the current government planning (and indeed the consultant reports) being so conservative as to propose that Tasmania only target Net Zero by 2030 ?

Tasmania is currently a world leader in emissions reduction, this presents the potential opportunity for significant first mover advantage in Brand recognition, and as an economic attraction to world leading climate conscious industry, and nature-based tourism.

Tasmania could proudly claim that it is currently Net Carbon Negative and set targets to further reduce carbon emissions across multiple sectors, to maintain and enhance this standing.

Comments on proposed measures

The reports prepared for Government by Point Advisory, with specialist input from Indufor, identify a multitude of opportunities to reduce emissions across all sectors, and estimate that these actions will have a net economic benefit to Tasmania in the modelled timeframe to 2050.

This is encouraging, it suggests that there should be widespread political and societal support for these actions. BUT it also suggests that there is likely potential to take further or faster actions to address this global emergency for the societal and environmental benefits that they will bring, even if they may not bring short term economic benefits.

There are some additional opportunities that do not appear to have been considered in the discussions so far that should be further investigated.

Ecological Restoration of Tasmania's Great East Coast Reef and Giant Kelp Forests

Tasmania's Great East Coast Reef extends for the length of Tasmania's east coast and around parts of the south coast. It is a unique part of Australia's Great Southern Reef System that extends from southern NSW around to north of Perth in WA.

The Carbon sequestration or emission status of the Great East Coast Reef does not appear to have been factored into the carbon accounting for Tasmania, despite the fact that it is entirely in Tasmania's State Waters and so is a state responsibility. I am not aware of the quantum of the carbon of carbon exchange associated with the Reef but it would be significant.

The Reef formerly supported massive stands of Giant Kelp Forest, the tallest marine algae in the world, some up to 50m long. It is one of the fastest growing plants in the world at up to a foot a day, and capable of drawing significant dissolved carbon from the ocean. The reef also supports a diverse array of other marine algae, invertebrates and fish species, including economically important species such as Southern Rock Lobster and Abalone. Over 150 marine species are dependent on the Reef ecosystem.

Over the past 30 years the Giant Kelp Forests have almost disappeared as a result of the impacts of global warming. Climate Change has resulted in the southward extension of the warm East Australia Current into Tasmanian waters, and brought with it the Long-spined Sea Urchin south from its former range in NSW, both factors have impacted on the Giant Kelp such that only some 5% of its original extent remains.

The Long-spined Sea Urchin, which feeds on marine algae and a wide range of invertebrates down to a depth of some 60m, is now able to survive and breed successfully in the warmer waters of the east coast. In the absence of significant predators, it is breeding in plague proportions and forming Urchin Barrens, extensive areas of reef that are devoid of their normal marine life on which only the Long Spined Sea Urchins can survive. It is estimated that already some 20% of East Coast Reefs are Urchin Barrens and this area is expected to expand to at least 50% within a decade or two. The Commonwealth have classified the Tasmanian East Coast Reef a National Threatened Ecological Community.

The expansion of the Urchin poses a major threat to the Southern Rock Lobster and Abalone fisheries and the ecosystems on which they depend, and likely on the capacity of the reef to draw down carbon.

Research by IMAS has demonstrated that breeding more heat tolerant Giant Kelp, by selecting samples from the isolated remaining populations and interbreeding them in warmer waters and selecting the most vigorous plants, can produce plants that will grow well in the current warmer waters of Tasmania.

This exciting research offers scope to regenerate the iconic Giant Kelp Forests of the East Coast, (subject to management of the Long-spined Sea Urchin population), restore the threatened ecological community, significantly draw down carbon, provide keystone habitat for multitudes of marine species, including Southern Rock Lobster and Abalone, and provide a boost to the fishing industry, recreational fishing, nature based tourism and diving – and so generating a significant economic boost to the region.

To achieve these benefits existing measures to manage the introduced Long-spined Sea Urchin will be required, but is possible.

Supporting the Industrial Hemp Industry in Tasmania

The current documents do not appear to refer to growing the industrial Hemp Industry in Tasmania as a potential means of drawing down atmospheric carbon.

Industrial Hemp is an extremely fast growing fibre crop (it can reach 5m in 6 months), yielding a harvest within 6 months of planting, making it a more productive fibre crop than tree plantations. Its fast growth rate, draws in significant carbon within a short time, much of which is stored in the stem and roots. It is deep rooted and the roots serve not only to boost soil carbon stores, but to break up compacted soil, making it more productive for subsequent crops, and assisting in soil moisture storage.

The long fibres in the stem of Industrial Hemp have multiple industrial uses, some of which potentially provide for long term carbon sequestration such as replacing energy intensive glass in some used of fibre. The pithy core of the stems (the hurd) is a waste product of fibre harvesting that can be mixed with lime to provide a low carbon, low allogenic, fire resistant and highly insulating building product that draws carbon dioxide from the air as it cures, as well as providing long-term sequestration of the carbon in the hurd. It is well suited as an alternative to high carbon building materials such as brick and concrete walls.

This is a growing industry in Tasmania, which is well adapted to be used as a rotational crop in traditional farming practices, and should be considered as a further potential opportunity for carbon sequestration in the Agriculture and construction sectors.

Regenerative Agriculture

The reports are somewhat dismissive of Regenerative Agriculture as a means of sequestering soil carbon while making agricultural lands more productive and drought resistant. It would complement the application of Tasmanian Grown *Asparagopsis taxiformis* in reducing methane emissions by stock.

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