CLIMATE TASMANIA

Independence, knowledge and commitment to climate action

Submission in response to the Tasmanian Government's Draft Climate Change Action Plan, 2023-25.

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Executive Summary.

Climate Tasmania is pleased to have the opportunity to comment on the Draft Climate Change Action Plan and also welcomes the government's commitment to release draft Emissions Reduction and Resilience Plans for public comment.

There are some matters of fundamental concern to Climate Tasmania in the Draft Action Plan. The government's claim to zero net emissions relies on the legitimacy of subtracting sequestered amounts of carbon dioxide from amounts of gross emissions. The submission discusses the problems with that approach. One of the problems is the ambiguity inherent in the use of the "emissions" in the Draft Action Plan. The presence of that ambiguity makes it extremely difficult to understand exactly what the Draft Plan is setting out to achieve.

Because of the ambiguity in the use of the word "emissions", Climate Tasmania has proposed a set of Transparency Principles which we see as being necessary to achieve clarity and public understanding. The adoption of the Transparency Principles will help protect the government against charges of greenwashing.

Finally, while the need to urgently phase out of fossil fuels has been known to climate science for decades, that need is not discussed in the Draft Action Plan. This failure to deal with the fundamental cause of the climate emergency is the greatest failing of the Draft Plan.

1. Introduction.

Climate Tasmania is a group of concerned professionals who have a diverse range of expertise, spanning scientific, economic, health, energy, social and policy aspects of climate change. Our aim is to provide timely, independent and authoritative advice to business, government and community leaders on climate change and appropriate policy responses. Details of the members of the Climate Tasmania board and expert advisers are available at www.climatetasmania.org/members/

Climate Tasmania welcomes the opportunity to comment on the Draft Climate Change Action Plan as we see this Action Plan as being central to Tasmania's response to the fast developing climate emergency. In May 2021 we made a detailed submission in response to the Government's Climate Action Plan opportunities paper which included 16 detailed opportunities for Tasmania to take action. Unfortunately, only one of those opportunities appears to have been taken up by the Government.

The Tasmanian Government's mitigation efforts have historically been considered and discussed with respect to each of the economic sectors used in emissions accounting. Climate Tasmania's view is that constraining policy responses into categories that have been created for accounting purposes will not automatically lead to the best policy approach. For example, some of the policy approaches that could address agricultural emissions will also impact on LULUCF emissions, because the management of agricultural land can be seen as part of agricultural policy or as part of a wider land use sector.

2. Problems with the definition of "emissions".

Mitigating the climate emergency necessitates dealing with emissions of greenhouse gases, as it is the concentration of those gases in our atmosphere which drives the retention of heat in the atmosphere/earth system — the physical basis of climate change. Emissions are the major focus of the Draft Action Plan; the word "emissions" occurs 192 times in the document, so it is of central importance that there is a common and clear understanding of what is meant by the word, and therefore what actions are planned to reduce Tasmania's emissions.

Climate Tasmania's concerns with what is meant by "emissions" are on two levels. This section will deal with the broad question of the calculation of "net emissions" but we also have concerns about the way methane emissions are converted to carbon dioxide equivalent values, and have made recommendations to that effect in our submissions on Tasmania's Future Gas Strategy as well as in this submission.

The glossary in the Draft Action Plan describes "emissions" as being "greenhouse gas emissions", which obscures the key point, which is that throughout the Action Plan "emissions" appear to occur in two guises:

- emissions into the atmosphere, which therefore result in increases in the concentration of greenhouse gases in the atmosphere. These emissions into the atmosphere are sometimes called "gross emissions".
- sequestration of carbon dioxide from the atmosphere. In Tasmania's case, such sequestration is almost invariably the drawdown of carbon dioxide from the atmosphere into biomass, typically trees.

Problem 1. The calculation of "net emissions".

Tasmania's claim to zero net emissions is based on the following seemingly simple calculation:

"Net emissions" = gross emissions minus sequestration

The problem is that while "gross emissions" and "sequestration" are both measured in tonnes of carbon dioxide equivalent, vastly different timescale are usually involved. The Keeling Curve in Figure 1 illustrates the problem. This famous graph is the atmospheric concentration of carbon dioxide measured on Mauna Loa, Hawaii in units of parts per million. The graph has two components:

1. An annual variation of a few parts per million - the smooth up and down cycle. This is mainly the cycle of the deciduous forests of the Northern Hemisphere releasing carbon dioxide in autumn and taking it up again in spring.
2. A continuously increasing baseline which pushes up the annual cycle. This is caused by extracting reserves of coal, oil and gas that were long held safely in the earth's crust and burning them, releasing carbon dioxide and causing the inexorable increase measured since 1958. The half-life of this additional carbon dioxide in the earth/atmosphere system is very long.

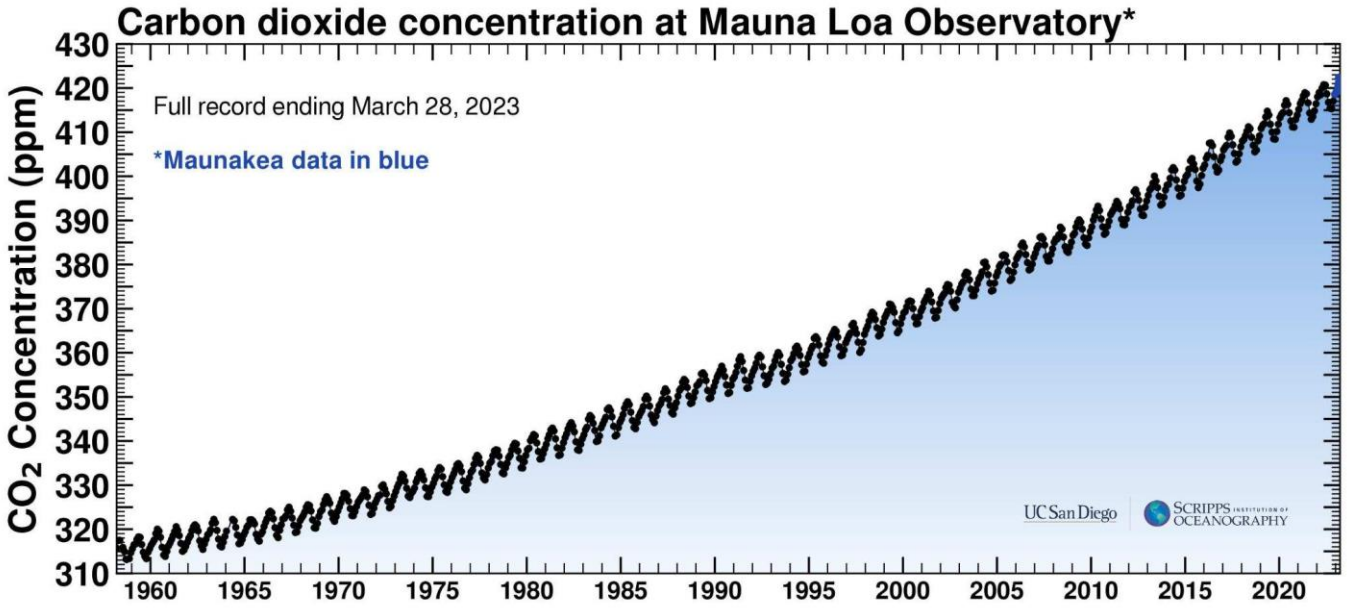

Figure 1: The Keeling Curve.

As the Keeling Curve illustrates, phasing out our use of fossil fuels is central to limiting the magnitude of the climate crisis, and subtracting short timescale sequestration from long timescale additions of carbon dioxide to the existing atmospheric burden of carbon dioxide conceals that primary requirement.

Reducing gross emissions slows down the rate of the underlying steady increase seen in the Keeling Curve, which is the necessary outcome. Increasing sequestration decreases the carbon dioxide concentration for only as long as the carbon is sequestered, which may not be for long, and possibly only until the next major bushfire[1,2]. This gives us a potential problem of inter-generational equity. Consider a scenario where for twenty years no attempt is made to reduce the use of fossil fuels; instead heroic amounts of tree planting are used to soak up a large proportion of those emissions. Several decades later a megafire destroys all the trees that were planted in the twenty years, giving a sharp increase in the concentration of atmospheric carbon dioxide which the then generation must deal with, even though they had no direct benefit from the past use of the fossil fuels and had no part in the past decision to attempt to rely on tree planting.

Climate Tasmania considers that sequestration has an important part to play, but that part is not instead of reducing gross emissions, it is as well as reducing gross emissions. We need to reduce gross emissions and increase sequestration. Accounting for and reporting gross emissions separately from sequestration will enable Tasmanians to see how effectively our climate action plans are achieving both objectives.

Problem 2. When the Draft Action Plan talks of "reducing emissions", what exactly does it mean?

In a RECFIT briefing on the Draft Action Plan, the officer giving the briefing was asked if there was anywhere in the draft where "emissions" only meant gross emissions. The answer was that there was no such place, so throughout the draft plan "reducing emissions" can mean either reducing gross emissions, or increasing sequestration, or some combination of both. Climate Tasmania views this as deeply problematic, as the two are not comparable in efficacy, as discussed above.

A failure to address this glaring ambiguity within the Draft Action Plan will leave proponents of the plan open to being accused of greenwashing.

[1] https://theconversation.com/a-tonne-of-fossil-carbon-isnt-the-same-as-a-tonne-of-new-trees-why-offsets-cant-save-us-200901

[2] https://www.climatetasmania.org/wp-content/uploads/Emissions-and-Forestry.pdf

3. A decade and a half of failure.

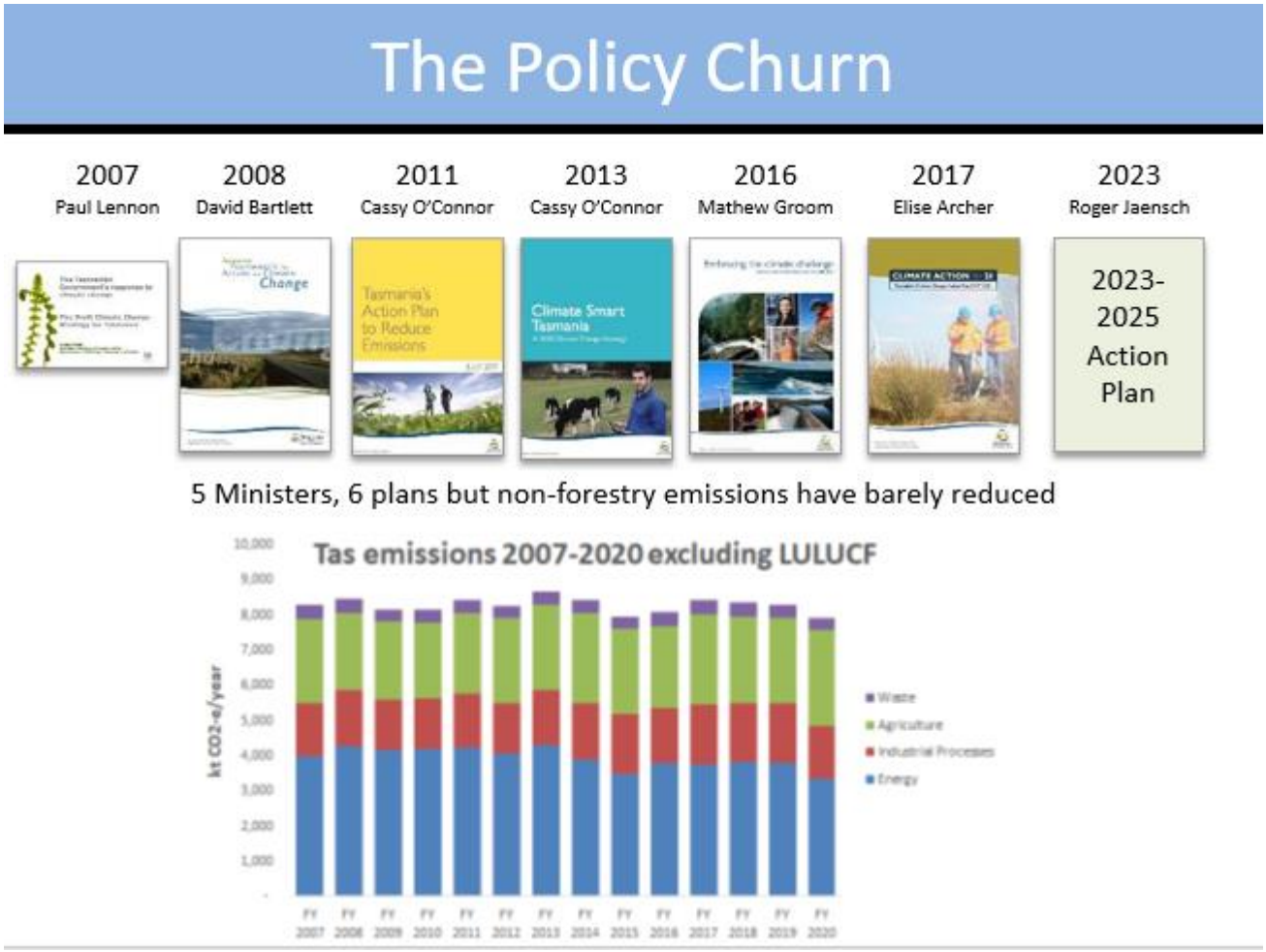

Figure 2: Fifteen years of Climate Action Plans

Figure 2 demonstrates that the previous six Climate Change Action Plans have not resulted in any material reduction in gross emissions. Climate Tasmania recognises that worthwhile initiatives were implemented in those previous plans, but the overall outcome has been feeble. The plans were not ambitious enough to make a difference.

As far as we can tell from this latest Draft Action Plan, we see little evidence that the seventh plan in the series will have a materially different outcome from its predecessors. The table on page 23 of the Draft Action Plan provides a measure of the lack of ambition. Assuming that all the current (2020) emissions and the abatement opportunities to 2050 apart from the LULUCF sector shown in the table are all gross emissions, the ambition is to reduce current emissions by 53% by 2050. This is simply not good enough at this critical juncture and is not the ambition of a true climate leader. The ambition should be to get as close as possible to zero gross emissions well before 2050.

4. Question 1: Vision and goals.

In its AR6 Synthesis Report released on 21 March 2023, the Intergovernmental Panel on Climate Change (IPCC) warned that action in the present decade is of utmost importance: "The choices and actions implemented in this decade will have impacts now and for thousands of years."

The proposed mitigation goal "By 2030 we will have reduced our emissions…" is meaningless. Which emissions? Are they gross emissions or "net emissions"? By how much will they have been reduced? Again, the total absence of clarity leaves the Tasmanian Government open to charges of greenwashing.

In contrast, we strongly believe that Tasmania should put in place as soon as possible sectoral gross emissions targets. This position is supported in the sixth assessment report (AR6) of the IPCC, which advises that while it is still possible to limit warming to 1.5C above pre-industrial levels with "limited overshoot", this can only be done with "rapid and deep and, in most cases, immediate greenhouse gas emissions reductions in all sectors this decade."

The IPCC-AR6 report confirms humans are increasing greenhouse gas emissions to record levels, and that global temperatures, now 1.1℃ above pre-industrial levels, are likely to reach 1.5℃ above pre-industrial levels in 2030 or soon after, which will make it harder to limit warming below 2°C. "Every increment of global warming will intensify multiple and concurrent hazards," the report said. It has "high confidence" that "climatic and non-climatic risks will increasingly interact, creating compound and cascading risks that are more complex and difficult to manage." In the careful, strictly sober world of science, this language is extremely telling.

More broadly, we see the present global circumstances as requiring a much stronger regulatory role by government than we have seen in recent decades. A similar emergency (though on a vastly smaller scale) was in the aftermath of the "Black Tuesday" bushfires of 1967, when Tasmania was badly affected by drought which reduced dam levels for the hydro-electric system to 14.3 percent of capacity.

Electricity rationing in that year saw commercial and industrial use severely limited, trolley buses discontinued, streetlights disconnected, and households restricted to 80 per cent of the power they had used in the same period of the previous year. The government acquired a steam turbine ship and berthed it at Bell Bay to provide power while an oil-fired (later gas-fired) power station was built nearby. That was replaced by the Tamar Valley natural gas station in 2009, now owned by Hydro Tasmania.

We submit that the climate emergency warrants government regulation of behaviour of a similar magnitude, supported by a strong education campaign to secure community co-operation.

5. Question 2: Priority areas.

This discussion relates to priority areas for mitigation; our comments on priority areas for adaptation are in section 8 of this submission. We think it is unhelpful to think of the priority areas for mitigation policy only in terms of the sectoral classifications used for emissions accounting purposes.

Priority 1: Phase out fossil fuels.

The climate crisis cannot be addressed without phasing out fossil fuels. We must stop using coal, oil and gas as soon as possible. Some parts of this phase out will be harder and take longer than other parts, which is why it is imperative to make fast progress where solutions are readily available. Some of these are:

- Rapidly phasing out the use of natural gas (or any kind of methane) for domestic heating, water heating and cooking.
- Rapidly phasing out the use of natural gas (or any kind of methane) to heat buildings and to heat water to temperatures in the 50 to 70 °C range.
- Light vehicle fleets. The conversion of the government's light vehicle fleet to electric is supported, but there is a lack of clarity in the 2030 target. Given that the fleet is probably mostly leased on a 3 year lease cycle, is this target back-ended so that most of the conversion takes place towards the end of the decade? If so, that would reflect a lack of ambition and undermine the authenticity that would be essential if seeking broad community support.

- Bus fleets. Again, the Draft Action Plan lacks ambition. One of Shenzhen's three bus companies bought their first 100 electric buses in 2011, and by the end of 2017 their entire fleet of 6,000 buses were electric[3]. By 2018 the company's entire fleet of 5,000 taxis were also all electric. This is what climate leadership looks like.
- Heavy duty trucks. The NSW company Janus Electric have developed a system for electrifying existing Class 8 trucks which uses swappable battery packs[4]. Their system looks ideal for Tasmania with our shorter distances and only a few main trucking routes.
- Much more aggressive planning and development of active transport infrastructure to ensure this is a viable option for Tasmanians. Amsterdam is renowned for its very high bicycle use, but that was not always the case: it is as a result of active decision-making and decades of progress. Amsterdam has the advantage of being very flat, but the increased availability of electric assist bicycles means we can easily overcome the hilly terrain in some parts of Tasmania.

Priority 2: Methane.

Methane is a priority because of its high short term global warming potential.

Three observations about methane underpin our policy approaches:

1. It has a large short-term influence on forcing because of its high global warming potential over the short term and the widespread nature of its sources.
2. Methane emissions accounting has historically usually been based on industry supplied calculation methodologies. It has become common for measurements of emissions to reveal higher emissions than previously assumed, and Climate Tasmania is not aware of a single instance where measured emissions have been lower than those predicted by the calculation methodologies.
3. The emission of methane from stationary sources (the gas network, waste facilities, etc) can be treated as an air pollutant thus making existing air pollution control legislation and regulatory expertise an available tool for reducing emissions.

With respect to emissions of methane from stationary sources, Climate Tasmania would like to see in the Draft Action Plan:

1. An immediate increase in the staffing and resources of the Tasmanian EPA so it can measure methane emissions for itself.
2. Whatever legislative or policy changes are needed so the Tasmanian EPA can tightly control methane emissions from all stationary sources and can use the full force of the enforcement measures available to it to ensure that methane emissions from stationary sources reduce year by year.
3. The inclusion of methane emissions from stationary sources in the annual Climate Change Activity Statement giving details of changes in methane emissions during the reporting period and full details of the enforcement actions taken by the Tasmanian EPA in order to reduce methane emissions.
4. The adoption of the 20 year global warming potential for methane in all public emissions reporting by the Tasmanian Government.

Dr John Todd's research, based on recent CSIRO data for Tasmania, has found an estimated 1 million tonnes of $CO_{2\text{-}e}$ emissions from wood heaters; about 40% of this is methane. Wood heater emissions of methane, therefore, must be included in the EPA's methane control plans.

[3] https://www.forbes.com/sites/brookecrothers/2021/02/14/this-chinese-city-has-16000-electric-buses-and-22000-electric-taxis/?sh=58880b823a92 and the video embedded in the article.

[4] https://thedriven.io/2022/05/19/the-driven-podcast-its-time-to-catch-up-elon/

Priority 3. Improved understanding of sequestration opportunities and accounting.

Because sequestration is important, we need to properly understand how it works in Tasmania's landscapes and ecosystems. In particular we need to understand how long the carbon is likely to remain so sequestered. Clarity is essential: we should have a statistical definition of the anticipated duration of the common types of sequestration, so that different sequestration paths can be classified by their likely duration. The Action Plan should initiate a considered research program to develop our understanding of sequestration in Tasmania. We also need a much clearer view of the uncertainties currently hidden in sequestration estimates. Climate Tasmania's view is that the uncertainties are likely to be very high, and these need to be made explicit, and work undertaken to reduce the uncertainties if possible.

Priority 4. Communication.

Communication clearly has an important role in the Tasmanian Government's climate change work. The recent amendments to the Climate Change (State Action) Act have locked the government in to issuing a number of plans, risk assessments, activity statements, emissions reports, etc. These are welcome.

There is, however, a major gap in the government's communication: it does not talk clearly, explicitly, and often about the need to phase out fossil fuels. Consider the Draft Action Plan: while the word "emissions" occurs 192 times, the phrase "fossil fuel(s)" occurs only six times, and in none of these is there a statement about the need to phase them out. This failure negates the government's claim to climate leadership.

As an example of what is needed, here is the beginning of a possible speech by the Premier which illustrates the directness and clarity required:

> *My fellow Tasmanians, our society has arrived at a key moment in our history. The science is clear: climate change is real, it poses great risks to us, our children, and our grandchildren if we do nothing. We are already seeing changes in our climate, and our scientists tell me that more changes are already locked-in. These changes are not positive. We need to face up to the truth: we are doing this to ourselves through our use of fossil fuels. That's right, every time we use petrol, diesel, natural gas, coal, aircraft fuel or marine diesel we are adding to the load of carbon dioxide in the atmosphere which is changing the climate. So that is our challenge: we need to stop using those fuels. We need to phase out our usage of petrol, diesel, gas, coal and so on.*
>
> *This is an enormous challenge. Currently, almost everything we do involves transport fuelled by one of those fuels, and we use gas to provide heat in homes and factories. The good news is that some of the technologies we need, such as heat pumps and electric vehicles, are already available. We need to make as fast progress as we can where the alternatives are available in order to give us as much time as possible where the technologies are not yet available. The bad news is that the longer we delay, the faster we will need to make the change, the harder the change will be to make, and the worse our climate is likely to become.*
>
> *The Tasmanian Government will lead the way in this transition, and we will support all members of our community as follows…*

6. Question 3: Information and knowledge.

The Draft Action Plan lists "transparency and reporting" amongst the principles which underpin the plan. While Climate Tasmania agrees that transparency is of vital importance, our comments on the lack of clarity around the use of "emissions" underscore our strong concern that this plan and the Government's actions are far from transparent. Accordingly, we propose the following Transparency Principles which should be applied to all governmental communication on climate change.

Transparency Principles.

1. The volumes of fossil fuels used by any person or organization in Tasmania must never be regarded as confidential and must be open to public knowledge.
2. Emissions reporting must always report gross emissions and sequestration separately regardless of the sector or situation. Our preference is for the use of "net emissions" to cease altogether.
3. The 20 year Global Warming Potential value for methane must be used for all local greenhouse gas emissions reporting and in all policy decisions involving methane, whether the methane is fossil or biogenic.
4. All Government Departments, Government Business Entities and entities receiving Tasmanian Government funding must report their fossil fuel use volumes every quarter into a public database so that all Tasmanians can review their progress with phasing out those fuels.
5. Numerical reporting (e.g. of emissions, sequestration, etc) must be sensitive to the uncertainties in the values being reported and must not use any more significant figures than are warranted under the circumstances. For example, the table on page 23 of the Draft Action Plan lists the estimated "net emissions" value for LULUCF in 2020 to four significant figures, implying an accuracy of 1 part in 10,000. This is important, as the precise looking numbers imply a certainty which simply does not exist. The current pretended precision makes the government open to charges of greenwashing.

The Tasmanian Government currently has important information gaps which make it very hard to formulate effective policy. An example is the lack of information available about the largest users of each category of fossil fuels in Tasmania. How can the government formulate policy about reducing diesel use (or even planning for a possible diesel shortage) when it does not know who the top 20 users of diesel are in Tasmania, or what proportion of the total use of diesel is covered by the top 20 users?[5] The same is true for all the fossil fuels except perhaps coal.

7. Question 4: Transition and innovation.

The question posed in the Draft Action Plan is: "Will the key actions under Priority area 2 support Tasmania to achieve its 2030 emissions reduction target and continued emissions reduction across Tasmania?" This question is impossible to answer, as we have no information about how much of the target is to be achieved by reductions in gross emissions, and how much by increases in sequestration. Nor do we know anything about the likely duration of any increased sequestration: is the carbon likely to continue to be sequestered in 10, 100, 1,000 years, or longer?

8. Question 5: Adaptation and resilience.

The resilience of Tasmanian Society will determine our success in adapting to the many changes that could occur as a result of changes to the global climate and, more specifically, to changes in the Tasmanian climate. One issue is that virtually every aspect of our built infrastructure, both public and private, is designed on the basis of the probability of extreme weather: heat, cold, rainfall intensity, wind speed, storm surge, etc. The concept of a "100 year flood" is a statement of the probability of an event arising from extreme weather. However, we are now in a situation where there is no "normal" weather any more, and so those design bases are unlikely to be adequate. Similarly, our present plans will have to allow for dealing with an increased population, including refugees, and a range of economic disruptions that will almost certainly occur as every nation in the world attempts to adapt to climate disruption.

[5] The approach by Coltura at https://coltura.org/gasoline-superusers-2-report/ is a good example of using fuel usage data to drive cost-effective policy.

The physical changes (heat, drought, fire intensity, flooding, coastal inundation, etc.) in the near future (say, 20 to 50 years) can be modelled based on existing knowledge. In this respect, Tasmania seems to be doing well, the State has commissioned experts in the private and public realms to prepare detailed projections of the risks of these extreme events. As the work is completed it is made available to any interested parties through various reports published on-line, for example the Tasmanian Flood Mapping Project Reports. This means businesses and private citizens can make their own decisions on future climate risks. This is very useful. But what is less clear in the Draft Action Plan is what actions the government is taking in modifying, where necessary, those areas for which it has responsibility. This might include, for example, laws covering the liability of local government, new building standards and retro-fitting older buildings and other infrastructure, assisting communities to move if exposed to regular flooding or coastal inundation, social services, social unrest and many other foreseeable challenges.

Tasmania's health system is another area where adaptation is very important. Heat is a leading cause of climate related morbidity and mortality, and although Tasmania enjoys a cooler climate than most of mainland Australia, this is balanced by the lower level of heat acclimatization amongst Tasmanians and in Tasmania's buildings. Accordingly, an extreme heat public health plan needs to be developed, implemented and communicated for Tasmania. Another climate impact with health implications relates to the spread of disease vectors into Tasmania as our climate warms. Which diseases could be an issue here? What monitoring systems are in place? How well is the Tasmanian Health Service prepared?

We need an open, non-political forum where these complex changes that make our society more or less resilient to climate disruption can be raised and discussed.

9. Question 6: Implementation, reporting, and monitoring and evaluation.

The question posed in the Draft Action Plan is: "Are there other ways the government could make its action on climate change, and progress towards meeting its targets, more transparent and accessible?" The answer is a resounding yes; adopting our Transparency Principles would make the government's actions more transparent and accountable, and would provide a significant protection against charges of greenwashing.