

# Submission to 2018 Review of the Climate Change (State Action) Act 2008

## Introduction

A key part of Sustainable Living Tasmania's vision is for Tasmania to play a leadership role in securing a stable climate and thriving in the process; inspiring others into action.

We generally agree with and support the recommendations put forward in the Amending the Climate Change (State Action) Act 2008 Discussion Paper<sup>1</sup>, with the exception of the first recommendation:

*"That Tasmania set a new aspirational long-term emissions reduction target which is achievable and consistent with international ambitions to avoid dangerous climate change. Based on best available science, this target should be to achieve zero net greenhouse gas emissions by 2050."*

This submission focuses on that recommendation. We make six of our own recommendations below. Three appendices that provide supporting context and analysis are also included.

## Process

It is impossible to set truly aspirational and achievable targets without a thorough understanding of Tasmania's emissions trajectory and the factors that may influence it. In our experience speaking with many stakeholders, few if any understand Tasmania's emissions trajectory, especially from the forestry subsector.

As such, we were glad to learn the Tasmanian Government was commissioning a study into potential long-term emissions trajectories across different sectors of the economy. We hope that it will be sufficiently comprehensive. We understand it is expected to be completed by the end of 2018.

It would be a shame to set a target now, and find out a short time later that it is either unachievable or unambitious. Consequently, we make the following two recommendations:

**Recommendation 1:** Await results of the study into Tasmania's emissions trajectory before setting targets.

**Recommendation 2:** Allow public review of, and feedback on, the study and subsequent target setting.

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[http://www.dpac.tas.gov.au/data/assets/pdf\\_file/0007/387160/Amending the Climate Change State Action Act 2008 Discussion Paper.pdf](http://www.dpac.tas.gov.au/data/assets/pdf_file/0007/387160/Amending_the_Climate_Change_State_Action_Act_2008_Discussion_Paper.pdf)

## Aspirational?

Given the proposed target was already achieved two years ago, it is difficult to understand how it could be described as “aspirational”. Tasmania can do much better than zero emissions. On a net basis, we can and should *remove* significant quantities of carbon dioxide over the remainder of the century. We can do so and thrive in the process.

**Recommendation 3:** Include more ambitious targets, quantifying net *removals* in tCO<sub>2</sub>-e by certain dates.

## Long-term = Unaccountable = Ignorable

As evidenced by decades of climate policy around the world, targets that are multiple election cycles away in the future have little impact on what actually happens. They allow the proverbial can to be kicked down the road to successive governments and, once it’s too late, the government of the day can blame past governments for leaving them an impossible task. Long-term targets on their own create no accountability, and so are safely and predictably ignored.

Targets must set out a smooth trajectory from where we are today to where we aspire to be in 2050, with interim targets at least every election cycle. This is the only way to achieve accountability, and therefore drive necessary change.

**Recommendation 4:** Include *annual* targets out to 2050, reviewed every four years.

## Based on Science *and Justice*

We agree that targets should be set on the best available science. However, science only answers what the *global* targets should be to avoid dangerous climate change (and then only probabilistically). It cannot answer how the remaining ‘emissions budget’ required to achieve them should be shared between jurisdictions. That question is one of political philosophy.

**Recommendation 5:** Set targets based on the best available science *and justice*.

The implied political philosophy behind the conclusion that the appropriate target for Tasmania is zero net emissions by 2050, is that all jurisdictions across the world should reduce their emissions by the same (proportionate) trajectory. This is plainly unjust, as it fails to take into account differences between jurisdictions’ historical emissions and capacities to reduce future emissions.

In Appendix 2, we discuss targets for Tasmania that are based on science and justice.

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## Sectoral

Having only a single target for the entire Tasmanian economy is grossly insufficient. It allows one sector to 'do all of the heavy lifting' while other sectors that will take longer to make the necessary changes are ignored until it is too late.

This has already happened in Tasmania, with forestry being the only sector to have significantly reduced Tasmania's emissions. All other sectors have remained fairly steady or increased, as detailed in Appendix 1.

**Recommendation 6: Include targets for each UNFCCC emissions sector.**

# Appendices

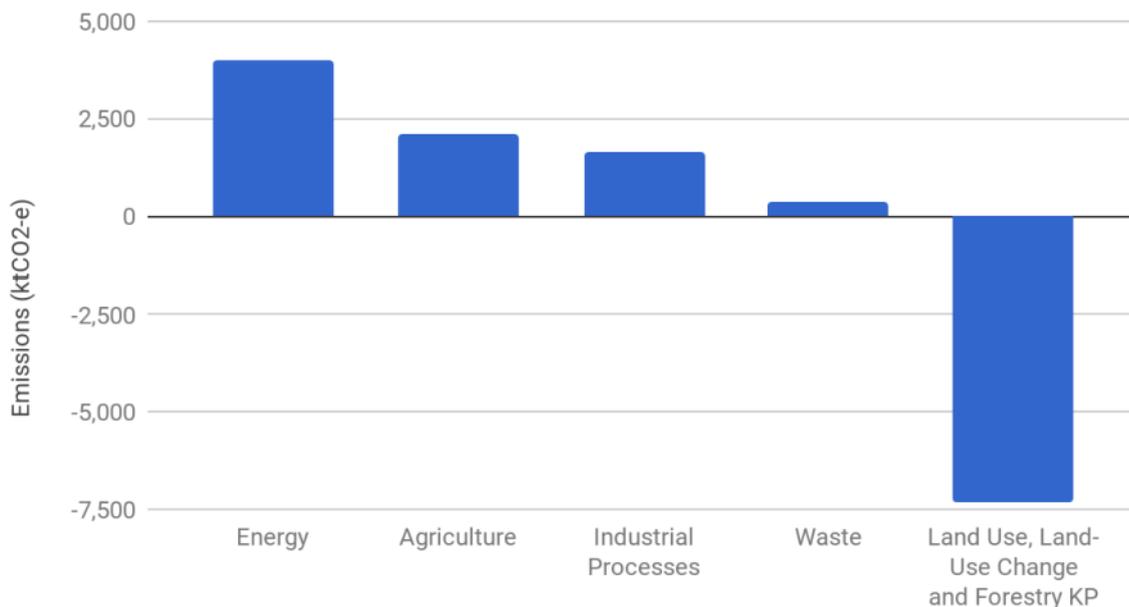
## Appendix 1: Tasmania's emissions in context

### Status quo

The most recent emissions data for Tasmania is plotted below in Figure 1. Forestry is currently a major carbon sink in Tasmania, and dominates the land use and land-use change (LULUCF) sector. This is due to the huge volume of carbon dioxide currently being removed from the atmosphere by regrowing previously harvested forests after the collapse of the woodchip industry around the turn of the decade.

Figure 1

Emissions by Kyoto Protocol sector, Tasmania 2016



Source: Australian Department of the Environment and Energy, Australian Greenhouse Emissions Information System<sup>2</sup>

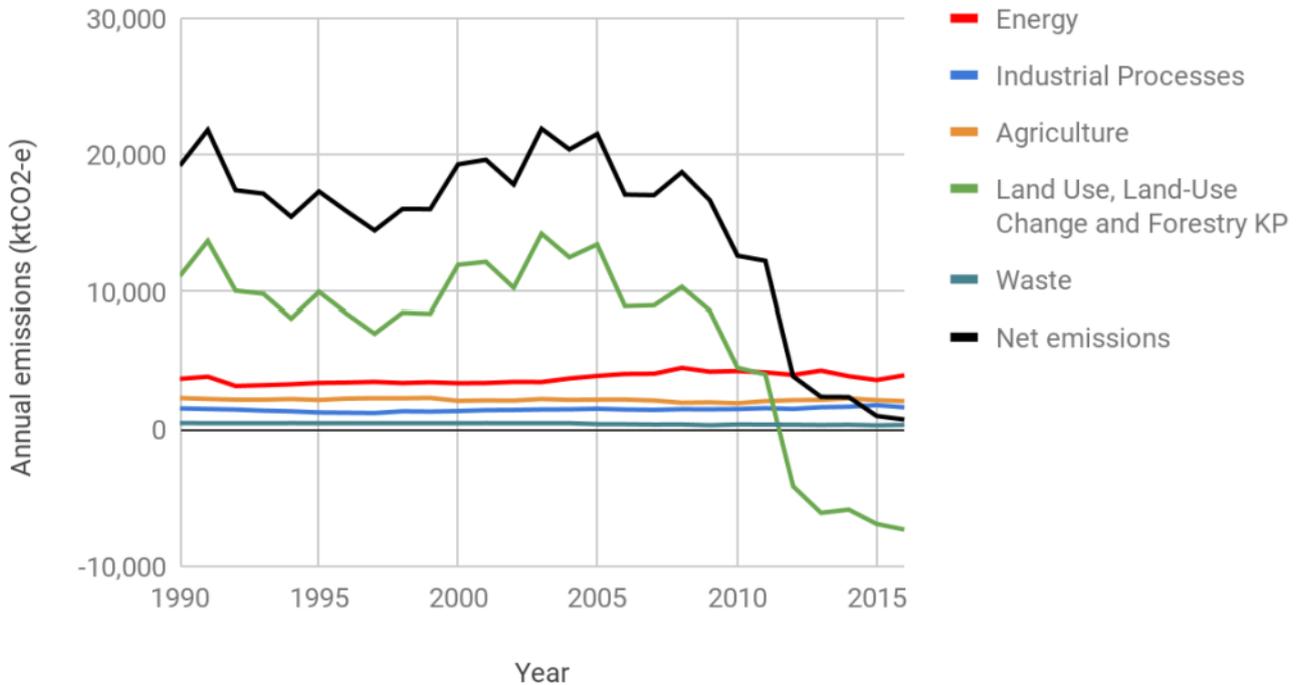
### Past emissions

As illustrated in Figure 2, Tasmania's emissions profile has always been dominated by forestry. It was the largest emitter every year from 1990 to 2010. Since 2012, it has been a sink, removing carbon dioxide from the atmosphere as previously harvested forests regrow. In 2016, it removed so much carbon dioxide that this "offset" all of Tasmania's other emissions, leading to the remarkable occurrence of Tasmania being "carbon neutral". We've used quote marks here, as while the statements are technically true, these removals are better conceptualised as partially counteracting past emissions from forests, rather than counteracting current emissions from coal, cars, and cows. In fact, less than 15% of LULUCF Tasmania's emissions from 1990 – 2011 were offset from 2012 – 2016.

<sup>2</sup> <http://ageis.climatechange.gov.au/>

Figure 2

### Emissions by year by Kyoto Protocol sector, Tasmania

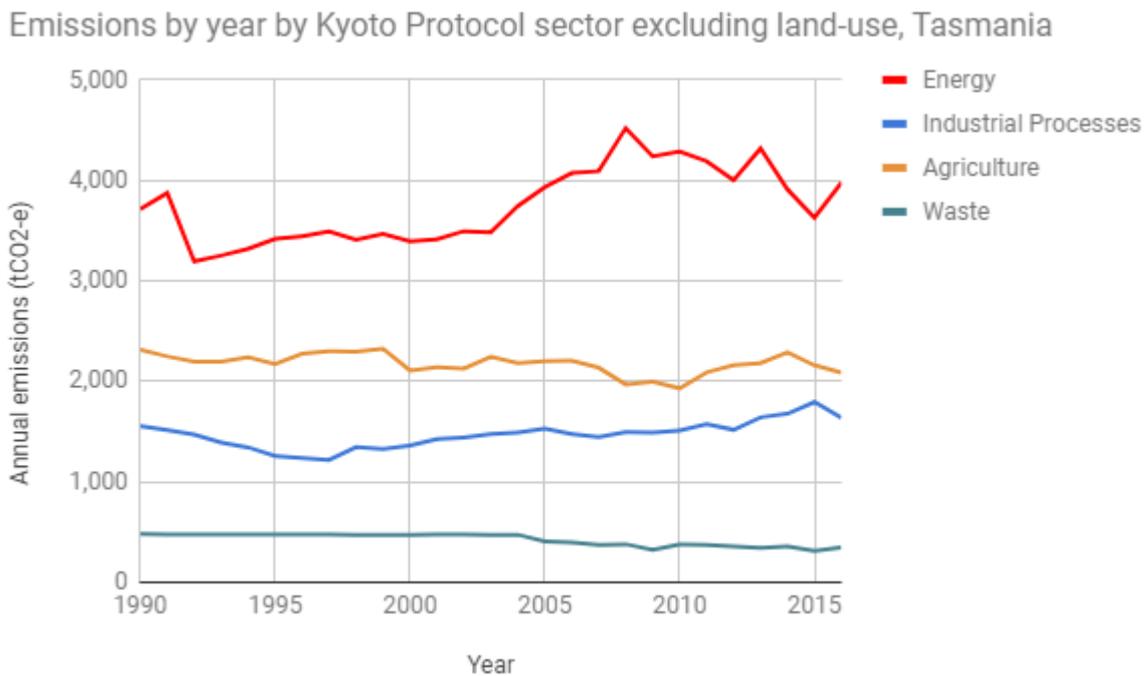


Source: Australian Department of the Environment and Energy, Australian Greenhouse Emissions Information System<sup>2</sup>

Emissions from other sectors are so dominated by LULUCF emissions that they are difficult to make out in Figure 2. As such, a separate graph excluding LULUCF emissions has been included Figure 3. It shows how Tasmania’s emissions in all other sectors have remained fairly steady or increased.

The uptick of energy emissions in 2016 was due to the electricity supply crisis, which led to the temporary use of diesel generators and the re-commissioning of the Tamar Valley gas-fired power station. The crisis also caused the metals industry to reduce overall production, hence the downtick in industrial process emissions.

Figure 3



Source: Australian Department of the Environment and Energy, Australian Greenhouse Emissions Information System<sup>2</sup>

## Comparison to national and global averages

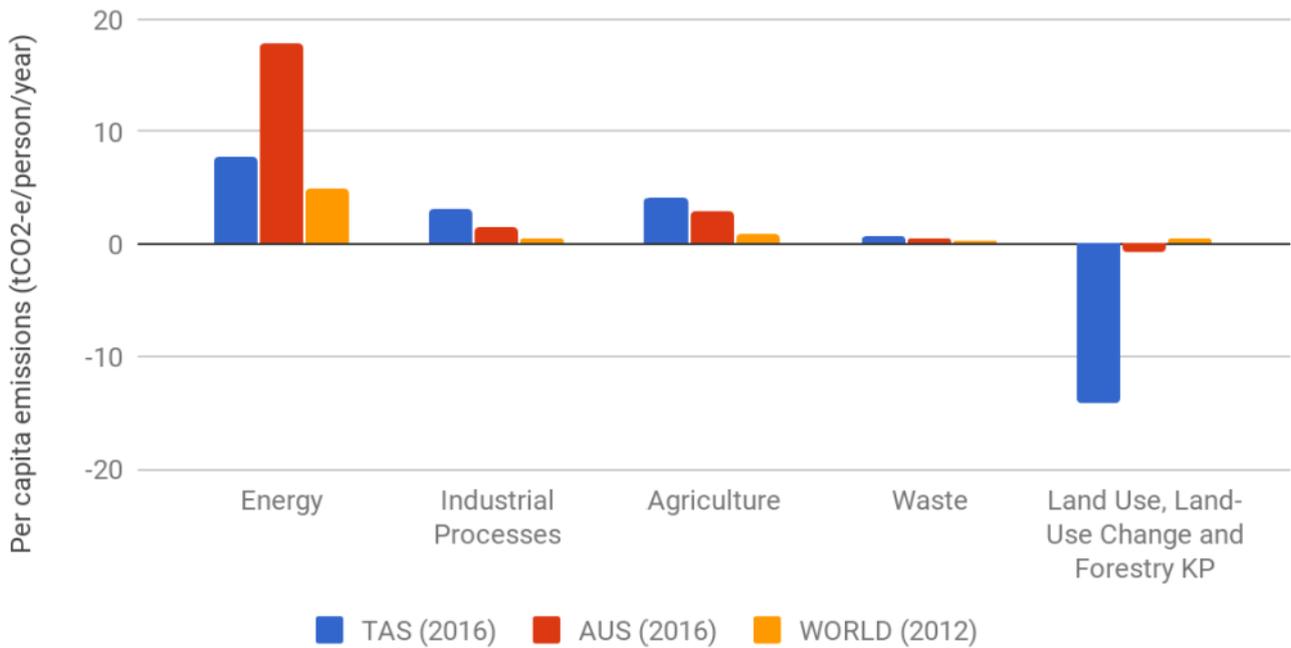
Tasmania's emissions are compared to the national and global per capita averages in Figure 4.

When the LULUCF sector is included, Tasmania's per capita emissions are lower than both the Australian and global averages. However, this is only a recent development. From 1990 to 2009, Tasmania's per capita emissions were 30% higher than the national average, and more than six times the global average.

When the LULUCF sector is excluded, Tasmania's per capita emissions are significantly lower than the national average, which is mainly thanks to Tasmania's very high proportion of renewable electricity and low reliance on natural gas. Even so, Tasmania's non-LULUCF per capita emissions are almost two and a half times the global average.

Figure 4

### Per capita emissions by Kyoto Protocol sector, Tas 2016, Aus 2016, World 2012



Sources: Australian Department of the Environment and Energy, Australian Greenhouse Emissions Information System<sup>2</sup>  
 Australian Bureau of Statistics, 3101.0 Australian Demographic Statistics, Table 4. Estimated Resident Population, States and Territories<sup>3</sup>  
 CAIT Climate Data Explorer. 2015. World Resources Institute<sup>4</sup>

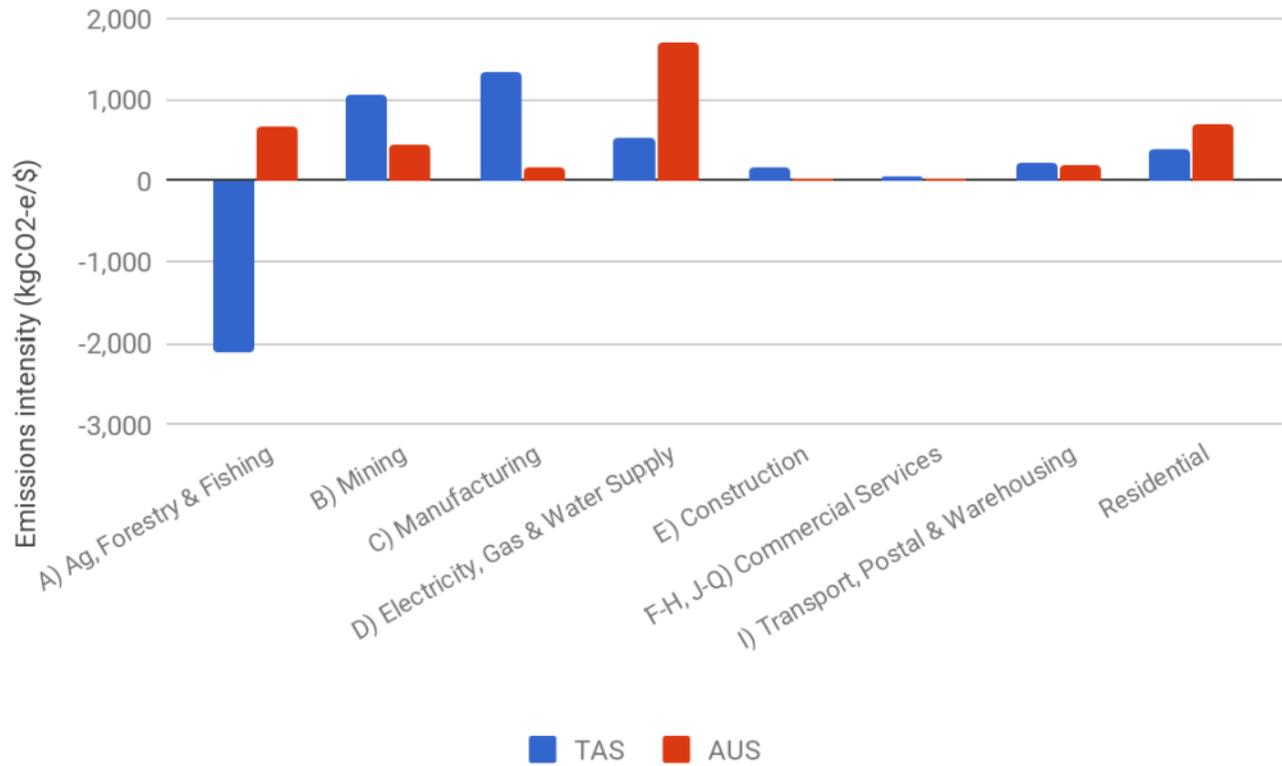
Two areas in which Tasmania’s per capita emissions are significantly higher than the national average are industry and agriculture, due in part to their large sizes relative to the Tasmanian population, but also to their relatively high emissions intensity. Figure 5 clearly shows the high emissions intensity of Tasmania’s industry (see the “manufacturing” division). Unfortunately, it is not possible to separate out agriculture with publicly available data, as it is grouped together with forestry in the ANZSIC classifications.

<sup>3</sup> <http://www.abs.gov.au/ausstats/abs@.nsf/mf/3101.0>

<sup>4</sup> <http://cait.wri.org>

Figure 5

Emissions intensity per \$ gross value added by ANZSIC economic division, Tasmania, National, 2016



Sources: Australian Department of the Environment and Energy, Australian Greenhouse Emissions Information System.<sup>2</sup> Australian Bureau of Statistics, 5220.0 - Australian National Accounts: State Accounts, 2015-16. Table 7. Expenditure, Income and Industry Components of Gross State Product, Tasmania, Chain volume measures and current prices.<sup>5</sup> Australian Bureau of Statistics, 8155.0 Australian Industry, 2015-16. Table 3 Industry value added by industry division.<sup>6</sup>

<sup>5</sup> <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/5220.02015-16?OpenDocument>

<sup>6</sup> <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8155.02015-16>

## Appendix 2: Discussion of aspirational, science-based and just emissions targets for Tasmania

The ultimate goal of any emissions target should be securing a global climate that supports human flourishing. Decades of scientific research and international negotiations chart the path we should follow to achieve this.

### Temperature limit

The UN Framework Convention on Climate Change summit in Paris agreed to the target of keeping global average temperatures "well below" 2 °C above pre-industrial levels, and to "pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels"<sup>7</sup>. Keeping warming **well below** 2 °C is crucial because climate change is projected to be far more dangerous at 2°C than 1.5°C; especially in terms of heat extremes, crop yield reductions, coral reef bleaching and subtropical water scarcity<sup>8</sup>.

### Global carbon budget

The cumulative amount of greenhouse gases that humanity can emit while retaining a safe climate is referred to as the global 'carbon budget'.

For a 66% chance of limiting warming to less than 1.5 °C, the budget was 400,000 MtCO<sub>2</sub>-e from the year 2011<sup>9</sup>. From 2011 to the end of 2015 we emitted 198,000 MtCO<sub>2</sub>-e<sup>10</sup>. So, the remaining global carbon budget is 202,000 MtCO<sub>2</sub>-e from the beginning of 2016. At current rates, we'll exhaust the remaining budget by the end of 2020<sup>11</sup>. It's clear we'll overshoot, but by getting to zero emissions quickly and then pulling carbon back out of the atmosphere into soils and plants, it's still (just) possible to stabilise global temperatures at, or close to, the 1.5 °C target.

### Tasmanian carbon budget

An obvious approach to calculating Tasmania's fair share of the global carbon budget would be to assume equal per capita share from now on. However, that would be unfairly ignoring past emissions that have been used for economic advantage by some and not others. In Tasmania's case, an average of 7 MtCO<sub>2</sub>-e per year was emitted from the Land-Use, Land-Use Change and Forestry (LULUCF) sector in the two decades from 1990. It is now sequestering at about the same rate. It is unreasonable to ignore past emissions from cutting forests while counting future sequestrations as they regrow.

It would be equally unreasonable to divvy up the global carbon budget from a time before people were sufficiently aware of the problem and had mechanisms in place to monitor and manage emissions. Perhaps,

<sup>7</sup> Paris Agreement: <http://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>

<sup>8</sup> Schleussner, CF. (2016) 'Differential climate impacts for policy-relevant limits to global warming: the case of 1.5 °C and 2 °C', Earth System Dynamics, Volume 7 Issue 2, p. 327-351, doi:10.5194/esd-7-327-2016 <http://www.earth-syst-dynam.net/7/327/2016/esd-7-327-2016-discussion.html>

<sup>9</sup> See Table 2.2 of the IPCC's 5th Assessment Report: [http://ar5-syr.ipcc.ch/topic\\_futurechanges.php#table\\_2\\_2](http://ar5-syr.ipcc.ch/topic_futurechanges.php#table_2_2)

<sup>10</sup> See the Carbon Dioxide Information Analysis Centre's budget (Excel download). Note that they record values in billion tonnes of carbon per year (GtC), for the globe. To convert to billion tonnes of carbon dioxide (GtCO<sub>2</sub>-e) per year, multiply by 3.664. Downloaded from this page: <http://cdiac.ornl.gov/GCP/carbonbudget/2016/>

<sup>11</sup> According to source in Footnote 5, global emissions for 2015 were 41 GtCO<sub>2</sub>-eq

then, the most reasonable date from which to equally divide the global carbon budget would be when the United Nations Framework Convention on Climate Change (UNFCCC) entered into force. The objective of this international treaty is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system"<sup>12</sup>. It was adopted in 14 June 1992, and entered into force on 21 March 1994.

So, Tasmania's fair share of the global carbon budget can be calculated as follows:

- Global remaining budget as at start of 1994 = 941,000 MtCO<sub>2</sub>-e
- Global population as at 1994 = 5,538 million
- Tasmanian population as at 1994 = 0.473 million
- **Tasmania's carbon budget from 1994 = 80.0 MtCO<sub>2</sub>-e**

From 1994 to 2016, Tasmania emitted 265.4 MtCO<sub>2</sub>-e. That is, **Tasmania has used its fair share of the global climate budget more than three times over!** To get back within our budget, we need to remove 185.4 MtCO<sub>2</sub>-e on a net basis. This could be set as a target to be achieved by 2100.

## Aspirational and achievable?

Is removing 185 MtCO<sub>2</sub>-e by 2100 aspirational? Indeed. Is it achievable? Sadly, we don't believe it is. However, we do believe Tasmania can remove a significant amount of greenhouse gases from the atmosphere on a net basis by the end of the century. A previous target trajectory we had devised had 65 MtCO<sub>2</sub>-e by 2100. We still believe this is achievable; however we need to develop a deeper understanding of forestry emissions trajectories to say so with greater confidence.

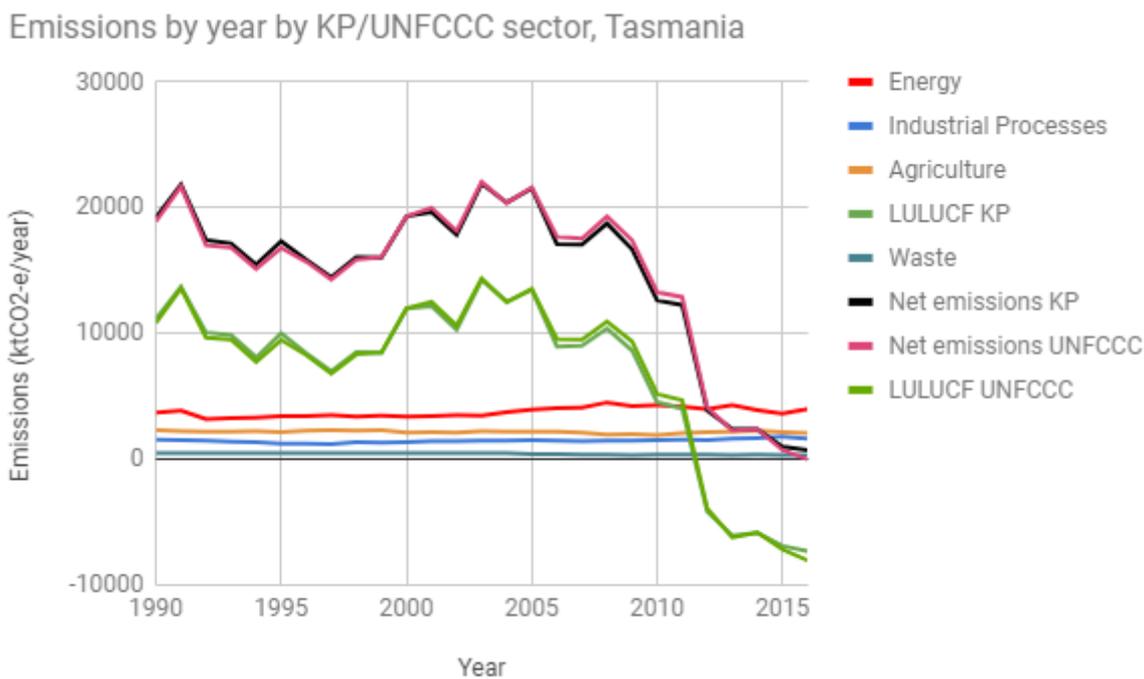
Hopefully the study commissioned by the Tasmanian Government into potential long-term emissions trajectories across different sectors of the economy will be sufficiently comprehensive to set truly aspirational and achievable targets.

<sup>12</sup> UNFCCC - [http://unfccc.int/files/essential\\_background/background\\_publications\\_htmlpdf/application/pdf/conveng.pdf](http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf)

## Appendix 3: Justification for use of Kyoto Protocol data in this submission

The State and Territory Greenhouse Gas Inventory switched from using UNFCCC data to Kyoto Protocol data this year. In this document unless otherwise stated, Kyoto Protocol data is used as it is more readily accessed. However, all sectors are treated identically by the two accounting methodologies with the exception of LULUCF. As shown in Figure 6, there is very little difference in between the two methodologies for Tasmania's past emissions.

Figure 6



Sources: Australian Department of the Environment and Energy, Australian Greenhouse Emissions Information System<sup>2</sup> State and Territory Greenhouse Gas Inventories, 2016<sup>13</sup>

<sup>13</sup> <http://www.environment.gov.au/system/files/resources/a97b89a6-d103-4355-8044-3b1123e8bab6/files/state-territory-inventories-2016.pdf>