

*Tasmanian*  
Framework *for*  
Action *on* Climate  
**Change**

Change  
Change



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# Foreword



## FOREWORD

Spending just half an hour reading about climate change can be a pretty sobering experience.

The experts tell us that a temperature rise of just a few degrees will have extraordinary global repercussions.

Of course, there have always been natural fluctuations in the world's climate. This time it's different. There is now scientific consensus that human activity is almost certainly the primary cause of the rapid changes we're seeing in the earth's climate. And there's more change to come.

The current drought across many parts of Tasmania has given us all a taste of what lies ahead. While the projected impacts of climate change on our island are smaller than those facing many other parts of the world, they will still be significant, and they will affect our environment, our economy and our communities.

Importantly, while there are a few scientists that remain sceptical about the cause, almost none now doubt that we must adjust to a changing climate.

In December 2007, Australia's governments agreed to establish a Climate Change and Water Working Group under the Council of Australian Governments to ensure we take an effective and coordinated response to climate change. The Tasmanian Framework for Action on Climate Change is our first contribution to this new national direction. The Framework will take us forward with a firm basis for community involvement so that we can capture the benefits and address the challenges of climate change. By embracing this framework, we will find solutions together.

The Tasmanian Framework for Action on Climate Change is a significant step in addressing an issue that affects us all. It is a 'living document' which will be updated regularly to take into account new actions in response to developments in science and policy.

As a community we must operate in a clever, constructive and innovative way that transcends the political divide. We are all responsible for climate change, and we are all capable of developing the solutions.

Our great challenge in this area is to create a lasting and healthy legacy for future generations. We want our children to judge that we recognised the challenges and opportunities, and that we addressed them comprehensively for the benefit of all Tasmanians.

A handwritten signature in black ink, appearing to read 'David Bartlett', written in a cursive style.

David Bartlett MP  
Premier

## INTRODUCTION

We know now that human activities are the most likely cause of climate change, and that it is occurring faster than previously predicted. We also know that it will bring catastrophic consequences if action is not taken urgently. The choices we make today and over coming years about our greenhouse gas emissions, and the way we adapt to change in our environment, will determine the planet's future.

Climate change is a global challenge and it requires a global response. No matter where we live in the world, we have a common atmosphere. All of us share responsibility for the problem, and all of us share responsibility for finding the solutions. Tasmania must do its part if we expect others to do likewise.

Views on the most appropriate international, national and local responses to climate change are evolving rapidly as our understanding of the associated challenges and opportunities continues to improve. It is already clear that we will need to adapt to more than just environmental changes. National policy developments will have a significant impact on Australia's economy and the way we live and work, requiring adjustment across all sectors of our community.

These changes will also deliver real opportunities for Tasmania. International demand for expertise in renewable energy and 'clean, green' goods and services will grow. New market opportunities may emerge in the cultivation of crops that are no longer available on mainland Australia. The demand for innovation in low-carbon products and low-emissions technologies will see significant sales opportunities in Australia and overseas.

With the potential to generate approximately 90 per cent of our electricity needs from renewable resources, and tremendous natural stores of carbon, Tasmania is already well-positioned to make the most of the opportunities presented by climate change. By acting now, reducing our emissions and planning for the future, we can aspire to show leadership as a model of low-carbon living.

The Tasmanian Government is already showing leadership by reducing its own emissions through the *Framework for Action on Reducing the Tasmanian Government's Greenhouse Gas Emissions*<sup>1</sup>, by setting a 2050 emissions reduction target, and by establishing

*"We, the human species, are confronting a planetary emergency – a threat to the survival of our civilization that is gathering ominous and destructive potential even as we gather here. But there is hopeful news as well: we have the ability to solve this crisis and avoid the worst – though not all – of its consequences, if we act boldly, decisively and quickly."*

Former US Vice-President  
Al Gore, accepting the Nobel  
Prize in 2007.

the Tasmanian Climate Action Council. *The Tasmanian Framework for Action on Climate Change* now extends that work into the community by setting a policy framework for the whole State so that future action can be guided by critical research and analysis, targets, common objectives and principles.

## OUR OBJECTIVES

The challenge for Tasmania, as it is for the global community, is to reduce our greenhouse gas emissions while growing the economy and improving our quality of life. To help Tasmania become a model of low-carbon living, this Framework sets a course toward achieving four key objectives:

1. reducing our greenhouse gas emissions to at least 60 per cent below 1990 levels by 2050;
2. adapting to the changes in our climate that are occurring now and will continue to occur
3. capturing the new social, economic and environmental opportunities that climate change will present
4. demonstrating national and international leadership as a model low-carbon economy, and contribute to global climate change solutions.

These objectives will only be achieved by taking a new approach. Immediate action will be essential. The benefits of early action will far outweigh the economic costs of not acting.

## A NEW APPROACH

Traditional approaches to public policy and decision-making will no longer suffice as we respond to the complex, rapidly-evolving issue of climate change. We are entering new territory.

The climate change landscape has changed significantly since the Tasmanian Government released the *Draft Climate Change Strategy for Tasmania* for public comment in October 2006. Over 150 formal submissions were received on that draft from Local Government, businesses, community groups and individuals.

Since then, the Tasmanian Climate Change Office has been established in the Department of Premier and Cabinet, the Climate Change (State Action) Bill 2008 has been developed, and the Government has also taken action to reduce its own emissions.

There have also been significant developments nationally and internationally. The Intergovernmental Panel on Climate Change (IPCC) has released its Fourth Assessment Report<sup>2</sup> and Australia has ratified the Kyoto Protocol. In addition, the Rudd Government has committed to reducing Australia's emissions to at least 60 per cent below their 2000 levels by 2050, introducing an emissions trading scheme in 2010, and extending Australia's renewable energy target. All of these changes will have a significant and ongoing impact on the way Tasmania deals with climate change.

*The Tasmanian Framework for Action on Climate Change* takes these recent developments into account and reflects the public's input through the 2006-07 submission process. It also reflects the advice of Kinesis<sup>3</sup>, a Sydney-based firm working with government and business globally on climate change and innovative ways to reduce emissions. This Framework is a 'living document'. It will evolve over time as new actions come online, and as new developments in international science and policy emerge.

In the following chapters, the Framework provides a context for Tasmania's action and describes some of the environmental, economic and social effects of climate change.

Part Four is Tasmania's Action Plan. This part sets out our objectives, priorities and actions that can be taken immediately. It also suggests some of the actions that may be taken in the future once the appropriate research and analysis has been done, and once we have a better understanding of what national policy developments such as the emissions trading scheme will mean for Tasmania.

## KEY PRINCIPLES

The Framework is guided by six principles:

**Leadership** – Strong leadership will be required to overcome the inevitable obstacles and challenges that confront new ways of organising and behaving in our community. The Tasmanian Government will show leadership by taking action and by empowering Tasmanians to generate ideas and take action themselves. In turn, Tasmania will demonstrate leadership for other jurisdictions in the world by becoming a model of low-carbon living.

**Equity and shared responsibility** – Every individual in Tasmania shares responsibility for reducing our contribution to a changing climate and for adapting to the changes it will bring. But the impacts of climate change will not be felt equally, and assistance will be required in particular to enable our most vulnerable regions and households to prepare for climate change and manage the transition to a low-carbon economy.

**Best practice** – We will identify national and international best practice and then strive to move beyond it to place Tasmania's approach to climate change at the cutting edge of current thinking in Australia and overseas.

**Accelerated outcomes** – Climate change requires organisations and communities to respond much more quickly than they have in the past. We must begin achieving results now by removing barriers and creating incentives for change whilst building long-term strategies for sustainability.

**Creative thinking and innovation** – Climate change is a complex, multi-disciplinary issue that requires new ways of thinking. We must create an environment that gives people permission to think creatively so that we can drive innovation and foster collective learning and risk-taking.

<sup>2</sup> [www.ipcc.ch/](http://www.ipcc.ch/)

<sup>3</sup> [www.kinesis.net.au/home.html](http://www.kinesis.net.au/home.html)



**Openness and transparency** – Responding effectively and cleverly to climate change requires openness and transparency when it comes to information and communication. Being open and transparent helps to build trust and allows leaders and individuals to take decisive action.

By adopting these key principles, and taking early action based on sound science and consistently with the evolving national and international policy environment, Tasmania can rise to the challenge of climate change.

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## 2 CLIMATE CHANGE AND THE PLANET

There is overwhelming evidence of climate change at a global level. There is also a growing consensus worldwide, supported by the latest international scientific research, that human actions are the cause of much of that change.

The decisions and actions we take today will have effects far into the future. Global temperatures are predicted to continue to rise for decades due to emissions that are already in the atmosphere. Our actions over the next two decades will determine how severe the changes are, and the level of climate change that we will continue to experience in the long term.

### VIEWS OF INTERNATIONAL EXPERTS

The Intergovernmental Panel on Climate Change (IPCC) is a body set up by the World Meteorological Organisation and the United Nations Environment Program to provide the world's decision-makers with an objective source of information about climate change. In its 2007 *Fourth Assessment Report*, the Panel found that "warming of the climate system is unequivocal". They also found that the human-produced greenhouse gases that have already accumulated in our atmosphere will affect our climate for many centuries.

Since the 2007 IPCC Report was released, many climate change experts have expressed concern that the pace of change has been underestimated. Former Chief Economist of the World Bank, Lord Nicholas Stern now says that he underestimated the threat from global warming in his major report of 2006, arguing that "emissions are growing much faster than we'd thought, the absorptive capacity of the planet is less than we'd thought, the risks of greenhouse gases are potentially bigger than more cautious estimates, and the speed of climate change seems to be faster."<sup>4</sup>

*"These are the two faces of climate change – worsening causes of extreme weather on the one hand, accompanied by scientific evidence that humankind is the cause; on the other, clear signs that the world has awakened to the scale of the problem and, at long last, has decided to do something about it."*

*UN Secretary General, Ban Ki-Moon, September 2007.*

### WHAT'S BEEN HAPPENING TO THE GLOBAL CLIMATE?

The IPCC made a number of telling observations about the impact of greenhouse gas emissions on our climate. The Panel noted that 11 of the years between 1995 and 2006 ranked among the 12 warmest since record keeping began. They also observed that over the past 100 years, global temperatures have increased by almost three-quarters of a degree, and that global sea levels rose by about 17cm during the 20th Century.

These changes in average temperatures and sea levels have already begun to have significant effects on the global environment. For example:

- Mountain glaciers and snow cover on average have declined in both hemispheres, and the area affected by drought has increased since the 1970s;
- From 1900 to 2005, precipitation increased significantly in eastern parts of North and South America, northern Europe, and northern and central Asia, but declined in the Sahel, the Mediterranean, southern Africa and parts of southern Asia;
- Over the past 50 years, cold days, cold nights and frosts have become less frequent over most land areas, and hot days and hot nights have become more frequent; and
- Over the same period, heat waves have become more frequent over most land areas.

<sup>4</sup> [www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/sternreview\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm)

## WHAT HAPPENS IF WE DON'T TAKE ACTION?

If we don't start reducing our greenhouse gas emissions, then much greater change is in prospect. Small increases in global temperatures will have profoundly significant effects on the global environment. Lord Stern has found that:

A temperature rise of up to 2°C above pre-industrial levels is predicted to have impacts such as:

- Rising intensity of storms, forest fires, droughts, flooding and heat waves;
- Falling crop yields in many developing regions;
- Small mountain glaciers disappearing worldwide; and
- Coral reef ecosystems extensively and eventually irreversibly damaged.

A temperature rise beyond 2°C is predicted to have impacts such as:

- A rising number of people at risk from hunger, with half of the increase in Africa and West Asia;
- Significant changes in water availability across the globe;
- Possible onset of collapse of part or all of the Amazon rainforest;
- Large fraction of ecosystems unable to maintain current form;
- Many species facing extinction; and
- Onset of irreversible melting of Greenland ice sheet.

A temperature rise of beyond around 3°C is predicted to have impacts such as:

- Increasing risk of abrupt, large scale shifts in the climate system;
- Collapse of the Atlantic gulf stream;
- Collapse of the West Antarctic ice sheet, with sea level rise threatening major world cities; and
- Entire regions of the globe experiencing major declines in crop yields<sup>5</sup>.

There will also be significant economic costs if we do not take action. Using the results of economic modelling, the 2006 Stern Review concluded that if

the world did not act, the overall costs and risks of climate change would be equivalent to losing at least five per cent of global gross domestic product (GDP) each year. He also found that the costs of action to reduce greenhouse gas emissions to avoid the worst impacts of climate change could be limited to around one per cent of global GDP each year, and that the investment that takes place in the next 10 to 20 years will have a substantial effect on the climate in the second half of this century and beyond.

## GLOBAL EMISSIONS AND TARGETS

The IPCC showed that global greenhouse gas emissions due to human activity had increased by 70 per cent between 1970 and 2004. In 1990, global greenhouse gas emissions were 41 gigatonnes (billion tonnes) and in 2005 emissions had increased to 45 gigatonnes. If the world was to proceed at business as usual, we would reach around 80 gigatonnes in 2050. The IPCC view is that unless there are changes to human behaviour, global temperatures could rise as a result on average between 1.1°C and 6.4°C by 2100, and sea levels by around 0.8m by the end of this century.

There is now an emerging international consensus that we must act to keep global warming below around 2°C of pre-industrial levels or risk accelerated and eventually irreversible climate change. According to Lord Stern's most recent work<sup>6</sup>, to have any chance of holding warming to around 2°C would require a cut in global greenhouse gas emissions by about 50 per cent of 1990 levels by 2050, with further cuts made after that date.

The United Kingdom was the first country to commit through legislation to the target of reducing its greenhouse gas emissions by at least 60 per cent of their 1990 levels by 2050. Since then, the science of climate change has become even stronger, and there is recognition that even more aggressive targets may be required.

## INTERNATIONAL ACTION

The ratification of the Kyoto Protocol in 2007 by the Rudd Government has brought a significant shift in national policy on climate change. The Kyoto Protocol is generally seen as an important first step towards a truly global emissions reduction regime that will stabilise greenhouse gas concentrations at



a level which will avoid dangerous climate change. Motivated in part by their commitments under the Protocol, governments around the world are introducing legislation and policies to meet their commitments. A carbon market has also been created, and businesses are changing their investment decisions.

Prior to the first commitment period of the Kyoto Protocol expiring in 2012, a new international climate treaty will be re-negotiated. The United Nations Framework Convention on Climate Change's 15th Conference of the Parties will take place in Copenhagen in December 2009.

While there will be many challenges for the world's economies, there will also be great opportunities for those that can demonstrate low carbon growth and emissions reductions. A carbon-constrained economy can be a strong driver of innovation, and investment will flow to those jurisdictions with a distinctive competitive advantage in a low-carbon world.

## 3 TASMANIA IN THE NATIONAL CONTEXT

Australia has more to lose from unmitigated climate change than almost any other developed country. Our climate is already dry and variable, our economic prosperity depends very heavily on fossil fuel use and agricultural exports. There are vast distances between our population centres meaning we are highly transport dependent, our major communities are based mostly on the coast, and we are geographically close to developing countries which will be disproportionately affected by a changing climate.

The IPCC predicts that continued growth in global greenhouse gas emissions could result by 2020 in significant loss of biodiversity in ecologically rich sites including the Great Barrier Reef and the Wet Tropics of Queensland. The Panel has also predicted intensified water security problems and declining production from agriculture and forestry in southern and eastern Australia by 2030.

Australia faces an immense challenge in reducing its greenhouse gas emissions, which in 2006 totalled 576 megatonnes of carbon-dioxide equivalent or about 1.5 per cent of the global total. While Australia's contribution to the world's greenhouse gas emissions is relatively small overall, nationally our emissions are larger than many European nations, and we are amongst the highest emitters per person in the world. The major source of these emissions in Australia is the stationary energy sector, in particular coal-fired power stations. The transport and agriculture sectors are also major sources of greenhouse gases.

### TASMANIA'S PARTICIPATION IN THE NATIONAL DEBATE

The debate surrounding the most appropriate global, national and state responses to climate change is complex. The debate is also evolving rapidly, with new information, analysis and technology constantly emerging to increase our knowledge base and influence our choices.

Tasmania is contributing actively to the processes of national policy, legislation, regulation and program development. Chief among these initiatives is work

*"Australia would be a big loser - possibly the biggest loser amongst developed countries - from unmitigated climate change."*

*Professor Ross Garnaut,  
February 2008.*

to design a national emissions trading scheme, which will take effect in 2010. Tasmania is also working closely with the Garnaut Review<sup>7</sup>, and with other Australian governments on: extending the national renewable energy target; defining the respective roles of the Commonwealth, and state and territory governments in adapting to climate change; identifying the sectors of the economy which will be able to deliver carbon offsets in future; determining a consistent national approach to the use of energy efficiency programs; and designing other measures to complement an emissions trading scheme.

Each of these initiatives will shape the approach Tasmania can and will take to address climate change. A major objective underpinning Tasmania's engagement in these processes is to ensure that new national policies and programs recognise and reward the early investment Tasmania has made to become Australia's greatest source of renewable energy. The new emissions trading scheme, in particular, will impose new costs and have effects across the entire economy. We must ensure that it does not impact disproportionately negatively on Tasmania's economy, because this would be a perverse outcome for a state that has already embraced low-carbon electricity.

It is impossible to predict all of the outcomes from this intensive program of national work on climate change. However, some implications are already clear:

- There will be even greater interest and investment in renewable energy as suppliers across the country strive to meet the Australian Government's 2020 renewable energy target, providing many opportunities for companies with expertise in relevant technology and services.
- The cost of electricity will rise with the introduction of an emission trading scheme, as non-renewable power producers will pass the additional costs of purchasing emissions trading certificates onto their customers.

## WHAT'S BEEN HAPPENING TO TASMANIA'S CLIMATE?

There have been many changes in our climate over the past 50 years. Over most of Tasmania, average temperatures have increased by 0.8-1.0°C in line with the Australian average, with minimum temperatures increasing more than maximum temperatures. Rainfall has declined in most of the settled areas of Tasmania over the same period, with a decline of up to 20 mm per decade in the north-west and south-east. There have been increases of 5-15 mm per decade in parts of the south-west.

## WHAT'S LIKELY TO HAPPEN IN THE FUTURE?

Detailed analysis by the CSIRO, Hydro Tasmania and the Tasmanian Partnership for Advanced Computing<sup>8</sup> has predicted a range of seasonal and regional variations across Tasmania to 2040 as a result of climate change. They include:

- Annual rainfall increasing by 7 to 11 per cent in the west and central areas, and decreasing by around 8 per cent in the north-east, with increased winter and early spring rainfall expected in all areas.
- Annual maximum temperatures increasing in the north-east by 0.33 per cent, with generally warmer minimum temperatures in winter and late spring/early summer across the State with a magnitude of about one per cent by 2040.
- Annual potential evaporation increasing in all areas except the West Coast and adjacent highlands where small decreases are indicated.
- Wind speeds increasing marginally, with the strongest positive trends in winter, early spring and early summer, and particularly in the north-west in late autumn.
- Sea levels rising between 20 and 60 cm by 2095.

These changes will bring significant challenges and opportunities for our economy, our communities and our natural environment.

## CLIMATE CHANGE AND TASMANIA'S ECONOMY

Many sectors of Tasmania's economy will need to adapt to the environmental impacts of climate change as well as adjusting to the requirements of a carbon-constrained economy.

The challenge of achieving deep emissions cuts in the Tasmanian economy is substantial. Overall, our sectors are relatively energy intensive and transport dependent but have limited capacity to pass on higher prices to their customers overseas if they are to remain competitive. At the same time, physical changes in our natural environment as a result of climate change have the potential to significantly impact on our primary industry and forestry sectors.

Tasmania's economy is strongly export-oriented, with major exports including minerals, forest products and food. These products are sold primarily into Asia, along with sizeable exports to Europe and North America. Tasmania exports around 9.3 million tonnes of freight to mainland Australia and 8.7 million tonnes overseas. Tasmanian exports are predominately shipped, with around one per cent carried by air.

The major manufacturing industries supplying our exports are large users of energy and have limited capacity to pass higher costs onto their customers because of the intensely competitive international markets they supply. Rising electricity costs under an emissions trading scheme will pose particular challenges in this sector.

Agriculture forms a large proportion of the Tasmanian economy and is likely to be significantly affected by the impact of climate change. Changes to rainfall, fluctuations in temperature, increasing wind velocity and an increasing frequency of extreme weather events will all impact upon the viability of local producers. In a changed environment, some crops may no longer be suitable for cultivation while others will become viable, and new market opportunities may arise as some current crops become unsuitable for growth in other regions of Australia.

Climate change is also likely to have a significant impact on the productivity of fisheries. Increasing average temperatures of coastal waters around the State may adversely affect aquaculture production, especially of Atlantic salmon. Wild fish species may migrate to areas where the water climate remains suitable, with both positive and negative implications.

Tasmania's forests represent a huge bank of stored carbon. In future, they may provide us with an opportunity to benefit economically from their potential to sequester more carbon, but this will depend on the rules adopted nationally and internationally on the treatment of the forest sector in relation to climate change. However, some species

<sup>8</sup> [www.hydro.com.au/Documents/Energy/PRODUCTION-2996%20HydroCCRreport\\_Stages2and3%20PDF.pdf](http://www.hydro.com.au/Documents/Energy/PRODUCTION-2996%20HydroCCRreport_Stages2and3%20PDF.pdf)

may be unsuited to future conditions as the climate becomes drier and warmer, and the threat of disease and wildfire increases.

Fortunately, climate change will also bring many economic opportunities. International interest in renewable energy and 'clean, green' goods and services will grow, and Tasmania has a wealth of expertise in both areas. Changes in climate relative to parts of mainland Australia may open new opportunities for our agricultural sector, including as a result of our relative abundance of water. Tasmanian businesses focussed on innovation, low carbon products and low-emission technology will also see significant sales opportunities in Australia and overseas.

Tasmania is well placed to seize these opportunities. We have a strong human resource base in engineering, management and finance, we are rich in renewable energy resources, and our livestock is less emissions intensive than those in the northern hemisphere. Tasmania's economy *can* grow sustainability in a carbon-constrained world if we continue to build on our innovative traditions.

## CLIMATE CHANGE AND OUR COMMUNITIES

Tasmania has the most regional and dispersed population of any state in Australia, with almost 60 per cent of its 495 000 people living outside Hobart. Many of our communities are based around primary industries that will face real challenges in a carbon-constrained economy and a changing physical environment.

Within the State we also have the lowest median weekly household income in Australia, and net household worth is also lower in Tasmania. The proportion of Tasmanians whose principal source of household income is government pensions and allowances is 31.5 per cent, which is higher than the Australian average.

Rising fuel and electricity prices have the potential to have a disproportionate impact on our dispersed population, and particularly those on relatively low incomes. This is why it is important that we ensure that the costs of mitigating and adapting to climate change are distributed equitably across the community.

In Australia, every litre of petrol our communities can save will prevent 2.4 kilograms of carbon going into our environment, and every kilowatt hour of electricity we can save will stop more than 100 grams of carbon being released. Saving energy will also save money or help avoid additional costs as fuel and energy prices rise.

While Tasmanians live in many small pockets across the State, they have a very strong commitment to community. In 2006, over 130 000 Tasmanians participated in volunteering activities. Resourceful, resilient and connected communities that are able and willing to take action on climate change in their local areas will be essential for an effective State response.

In many cases, the biggest barrier to people starting or taking further action on climate change is a lack of information. If we are to engage everyone in our communities effectively, and empower them to take action, then we must provide information that helps them understand how climate change will impact on the places in which they live and work, and what they can do to adjust.

## CLIMATE CHANGE AND THE NATURAL ENVIRONMENT

Taking action to reduce our contribution to climate change and to adapt to inevitable change will also be essential if we are to preserve and promote Tasmania's unique natural environment.

Tasmania has a comprehensive system of national parks, reserves, historic sites and marine reserves, including the Tasmanian Wilderness World Heritage Area. These reserves cover about 37 per cent of the area of the State, and are fundamental to our social, environmental and economic future. They are also the source of much of the precious water that sustains Tasmania's population, they support regional communities and tourism, and they provide a range of recreational opportunities that inspire and invigorate people, and promote a sense of place and connection.

Almost a third of Tasmania's coastline is sandy shore that is vulnerable to erosion and retreat from repeated storm surges and sea level rise. At least 240 square kilometres of coastal Tasmania is at risk from storm surge inundation, and this could increase by a third with sea level rise this century. This will have a significant impact on a broad range of infrastructure, development and natural systems.

Changes to ocean currents around Tasmania are also likely to have a significant impact. Warmer ocean currents off the east coast of Tasmania will change marine habitats, affecting the extent and distribution of a number of significant marine species and ecosystems. Coastal areas along the east coast of Australia and Tasman Sea are already seeing changes to the distribution and abundance of fish, plankton, rocky shore intertidal species and sea birds. The strengthening of the East Australian Current may result in sub-tropical species moving into temperate waters, altering the habitat and distribution of a number of existing species.

Terrestrial habitats throughout Tasmania, especially marginal alpine environments and coastal systems, are also likely to be adversely affected. Many of our plants and animals survive in narrow ranges of environmental conditions, and a slight change in temperature or rainfall can have a significant impact on their likelihood of survival in the future. At the same time, the IPCC has predicted increasing penetration by feral animals into alpine and sub-alpine areas in the southern hemisphere.

Warmer temperatures, increased wind and changing rainfall patterns will impact on water availability at a time when much of Tasmania is already experiencing an extended period of drought. While the overall reduction in rainfall is expected to be relatively low, significant variations in the pattern and location of rainfall over time will have a major impact on sensitive ecosystems.

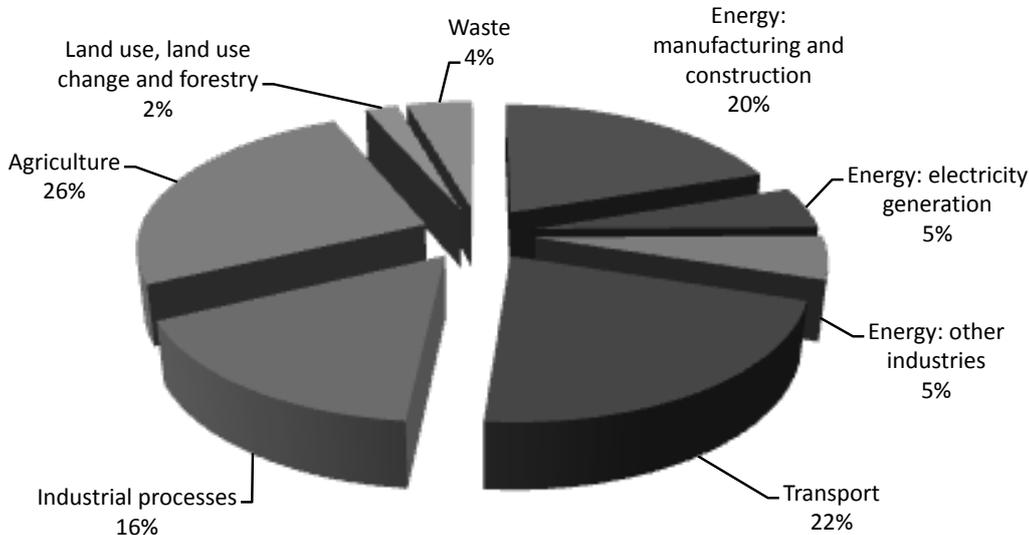
## TASMANIA'S GREENHOUSE GAS EMISSIONS

The last year for which official emission figures are available in Australia is 2006, when Tasmania emitted about 8.5 megatonnes (MT) of carbon dioxide and equivalent gases into the atmosphere. This represents a fall of over 25 per cent from our 1990 levels. The most significant reductions have been in the area of land use, land use change and forestry, where emissions have reduced from 3.6 MT to 0.2 MT as a result of changes to the way Tasmania's forest estate is managed and increased carbon sequestration in our forests.

There were a number of major sources of emissions in Tasmania in 2006.

The combustion of fossil fuels by the manufacturing and construction sector released 1.7 MT of greenhouse gases, energy use by other sectors released 0.4 MT, the generation of electricity released 0.4 MT, the use of fossil fuel in the transport sector (by air, road, rail and shipping) released 1.8 MT, industrial processes released 1.4 MT, the agricultural sector (releasing methane and nitrous oxide from livestock, crops and soils) released 2.2 MT. In addition, 2.7 MT was released as a result of land use change, which was offset by 2.5 MT of carbon dioxide sequestered through plantations, and the waste sector released 0.4 MT.

### TASMANIA'S EMISSION PROFILE BY SECTOR



Because of our extensive use of renewable energy, Tasmania's emissions from electricity generation are minimal. Nationally, stationary energy emissions typically represent up to 50 per cent of total emissions. In years of normal rainfall, up to 90 per cent of Tasmania's electricity comes from renewable resources.

## TASMANIA'S EMISSIONS REDUCTION TARGETS

Through the proposed *Climate Change (State Action) Act 2008*, Tasmania will legislate a target to reduce its greenhouse emissions to at least 60 per cent below 1990 levels by 2050. This means that we must reduce our emissions to at least 4.6 MT by 2050 while at the same time growing our economy and our population. This will be very challenging.

Tasmania will also develop interim targets. The interim targets will be informed by the latest science, the outcomes of the Garnaut Review and other relevant national and international developments. The emissions trajectory to reach our 2050 target must be clear to all Tasmanians in order to enable all sectors to make informed decisions about the future. Interim targets will be determined in 2009.

Of course, there are many uncertainties over such a long timeframe, and many factors beyond Tasmania's control. If global scientific opinion on appropriate targets changes over time, then we will have the capacity to amend our own targets through regulation to make sure we continue to play our part. While there are some calls to immediately adopt more challenging targets, the scale of the changes required to achieve such targets are so significant that existing computer models in Australia are not able yet to predict their impact on the economy.

## REDUCING OUR EMISSIONS

The introduction of a national emissions trading scheme will be the principal mechanism in Australia for reducing our emissions. In some cases though, the scheme and the price it places on carbon will not be enough to drive the necessary amount and pace of change. In the short term, an emissions trading scheme will not cover all the sources of emissions in Tasmania.

Complementary measures are likely to include:

- Supporting research, development, innovation and commercialisation of low-emissions technologies;
- Filling the gaps in information available to various sectors of the community on the importance of contributing to climate change solutions and the actions people can take; and
- Working with the community to reduce its demand for energy through energy efficiency and other initiatives.

There are other areas of Tasmanian Government responsibility which, with appropriate changes, can also help us to reduce the State's emissions. For example, building regulations, planning and transport infrastructure systems are important areas where we have primary responsibility.

While there will be many opportunities to reduce our emissions, we cannot take action at any cost. Our initiatives must be cost-effective in the Tasmanian context. In particular, our actions to reduce Tasmania's emissions must occur within a policy context in which we:

- Understand in detail the sources of Tasmania's greenhouse gas emissions and priority areas for emissions reduction;
- Actively engage the Tasmanian community;
- Set targets for reducing those emissions;
- Identify and take actions immediately and in the short and medium terms to reduce our emissions;
- Monitor and report regularly our emissions and the results of our actions; and
- Regularly evaluate and review publicly the steps we take.

This approach has already been embraced by the Tasmanian Government, and it has commenced action to reduce emissions across its own operations.

## ADAPTING TO CHANGE

Adapting effectively to a changing climate means taking action now to adapt to the impacts and to take advantage of any opportunities that may arise. All three levels of government have responsibility for action, and in cooperation we should focus on:

- Ensuring scientific research gives us a firm foundation for taking action in different regions and different sectors by measuring and predicting climate change and identifying new approaches;
- Giving individuals, communities and businesses appropriate information, resources, skills and incentives to plan and adapt to climate change and manage their own risks;
- Providing an adequate and appropriate emergency response to more frequent and intense events, such as bushfires, floods and storms, and assisting communities recover from such events; and
- Managing risks to public infrastructure, assets and values (including roads, biodiversity, national parks and reserves), and protecting industry and the community against health and bio-security risks.

The Tasmanian Government will continue to work with local governments and communities to identify and implement local adaptation measures. Strategic long-term land-use planning will also play a vital role in minimising the exposure of new developments to the effects of climate change, in particular within coastal areas where potential for sea level rise and storm surge activity will create new challenges. Planning to avoid development in high risk locations and developing and applying new design standards will be crucial in managing future challenges as our towns and cities grow.

## CONTRIBUTING TO GLOBAL SOLUTIONS

As Tasmania works to reduce its emissions and adjust economically, environmentally and socially to climate change, it will also be well-positioned to contribute to global climate change solutions. We have the opportunity to be leaders and innovators in many areas and to share our successes with the world.

Tasmania has a head start on other parts of the globe with its predominately renewable electricity generation. There is significant potential for expansion through further investment in hydro, wind, geothermal, solar and wave energy, and this energy will be available through Basslink to Australia's eastern states, offsetting their need to use electricity generated from burning coal.

The State is already building on its substantial expertise and investment in renewable electricity generation to supply expertise beyond our shores. Companies such as Roaring 40s are building renewable energy projects in China, helping them reduce their contribution to climate change. As many of our neighbours have incentives to reduce their emissions by expanding their use of renewable energy, Tasmania has an opportunity to build further on its strengths and supply an expanding market.

Significant opportunities also exist for Tasmania to export its knowledge and expertise to other parts of the world on the successful management of a large carbon sink, gained through the management of Tasmania's 423 reserves covering 2.5 million hectares.

Tasmania's global contribution can extend well beyond its renewable energy and sequestration management expertise. Scientists based in Tasmania have been undertaking globally significant research on the causes, effects and nature of many features of climate change for many years. They are contributing directly to the work of the IPCC and informing national and international decisions on adaptation in areas such as agriculture and fisheries.

## 4 TASMANIA'S ACTION PLAN

Tasmania must take action now to address the challenges and capture the opportunities of climate change. At the same time, our approach must be flexible so that we can take into account national and international policy developments, and new information from the scientific community as it becomes available.

Climate change is not a challenge that lends itself to a static, five year plan. This Framework is therefore the beginning of a process of responding to the challenges and opportunities. For Tasmania's response to be effective, we will need ideas and input from everyone in our community, and an open debate about the action we can and need to take.

This action plan sets out priority areas for action, a timeline for actions, the new initiatives on which we will immediately embark, and the directions we may be able to go in future based on new information. This action plan is a 'living document' that will evolve as new initiatives come into force.

Our actions on climate change will be guided by our six principles: leadership, equity and shared responsibility, best practice, accelerated outcomes, creative thinking and innovation, and openness and transparency.

They will all be aimed at achieving these four key objectives:

1. To reduce our greenhouse gas emissions to at least 60 per cent below 1990 levels by 2050;
2. To adapt to the changes in our climate that are occurring now and will continue to occur;
3. To capture the new social, economic and environmental opportunities that climate change will present Tasmania; and
4. To demonstrate national and international leadership as a model low-carbon economy, and contribute to global climate change solutions.

If we are going to achieve our objectives, then we must first understand exactly what climate change will mean for Tasmania and where the greatest opportunities will be. Our economy, environment

*"Just as science and technology has given us the evidence to measure the danger of climate change, so it can help us find safety from it. The potential for innovation, for scientific discovery and hence, of course for business investment and growth, is enormous. With the right framework for action, the very act of solving it can unleash a new and benign commercial force to take the action forward, providing jobs, technology spin-offs and new business opportunities as well as protecting the world we live in."*

*Former British Prime Minister,  
Tony Blair*

and communities are unique, and the approaches other jurisdictions take and the information they use to inform their decisions won't necessarily be appropriate for Tasmania.

Our actions in this State will therefore be guided by two fundamental pieces of research – a Wedges Analysis of mitigation opportunities, and the Climate Futures for Tasmania Project. These two initiatives will shape our approach to reducing our emissions, adapting to change, and capturing new opportunities.

Complementing and strengthening this work will be the efforts of the new Tasmanian Climate Action Council, which will play an important role in providing high level, independent advice to Government on targets and other matters relating to reducing our emissions and adapting to climate change.

### WEDGES ANALYSIS - IDENTIFYING THE BEST OPPORTUNITIES FOR CHANGE IN OUR ECONOMY

If Tasmania is to achieve its target of reducing its emissions to at least 60 per cent below 1990 levels by 2050, then we must reduce our current emissions by almost 50 per cent at the same time as our economy and population continue to grow. This will be a challenge for us all, and we must be prepared for the possibility that even greater reductions may be needed in the future.

To help reach this target the Tasmanian Government will fund a major analysis of emissions reduction opportunities across the Tasmanian economy. This work will utilise the wedges approach developed in

a famous Princeton University<sup>9</sup> study. The wedges approach is increasingly being used globally as a basis for jurisdictions to identify the most effective emissions reduction measures to adopt within an economy to achieve a set target. Using this approach, we will model a range of possible future greenhouse gas emission profiles to identify the emissions reduction measures in various Tasmanian sectors that will be most effective at achieving our target. The project will include comprehensive consultation with key stakeholder groups and will help industry sectors to re-focus in order to maximise opportunities.

The actions that come out of the analysis will also be heavily influenced by the outcomes of the Commonwealth emissions trading scheme design and the Council of Australian Governments' (COAG) work on policies and programs complementary to the scheme, which should be released later this year.

As well as sectoral targets, the wedges analysis will help identify appropriate interim emissions reduction targets for Tasmania. It will also provide a tool for assessing the merit of various future policy proposals and initiatives related to climate change. Through this work we will create a benchmark for decision-making in Tasmania for the next decade.

The tender for the analysis will be advertised in the third quarter of 2008. The report and the Government's response will be finalised in the last quarter of 2009, and this report will inform the establishment of interim and sectoral targets through regulations under the proposed *Climate Change (State Action) Act 2008*.

## CLIMATE FUTURES - UNDERSTANDING THE NATURE OF CLIMATE CHANGE IN TASMANIA

The physical impact of climate change on Tasmania will be different from its impact on any other part of Australia. We need to understand that impact in some detail if we are going to adapt effectively. Unfortunately, global modelling of the impact of climate change provides very little information specific to Tasmania.

The Tasmanian Government is sponsoring the Climate Futures for Tasmania Project<sup>10</sup> over three years for almost \$1 million a year. The Project is led by the Antarctic Climate and Ecosystems Cooperative Research Centre (ACE CRC), and

supported by a consortium of partners, including several State Government agencies, Hydro Tasmania and the Commonwealth Environment Research Facilities Programme. The Climate Futures for Tasmania Project will provide some of the most detailed and useful climate change projections available in Australia through to the year 2100. Producing fine scale (approximately 10 to 15 km resolution) climate projections for Tasmania under a range of accepted greenhouse emission scenarios will inform a wide range of Tasmanian sectors and communities about the likely impacts of climate change on the conditions in which they live.

The Project has already acquired high resolution topographic information for a significant portion of the Tasmanian coastline to allow an improved understanding of the risks from storm surge flooding and sea level rise. Engagement with stakeholders at all levels throughout the Project will ensure that the information is delivered in practical and useful ways across the community. The Climate Futures for Tasmania Project commenced in late 2007 and will run to the end of 2010.

## TASMANIAN CLIMATE ACTION COUNCIL - DRIVING CHANGE IN TASMANIA

Established in the proposed *Climate Change (State Action) Act 2008*, the Tasmanian Climate Action Council will be a high level, independent body providing advice to the Premier on climate change issues as they affect Tasmania. In the legislation, the Council is given a clear and direct responsibility for providing advice on the setting of interim emissions reduction targets and targets for specific sectors of the State's economy. It will also monitor progress towards achieving all emissions reduction targets for the State. The Council will provide a biennial report on its functions, including an assessment of the progress made on achieving targets and advice on alternative options or revisions to the targets, to the Premier. The Council will be established and operating by December 2008 and will be supported by the Tasmanian Climate Change Office.

<sup>9</sup> [www.princeton.edu/wedges/index.xml](http://www.princeton.edu/wedges/index.xml)

<sup>10</sup> [www.acecrc.org.au/drawpage.cgi?pid=climate\\_futures](http://www.acecrc.org.au/drawpage.cgi?pid=climate_futures)

# PRIORITY AREAS FOR ACTION

The Climate Futures for Tasmania Project and the wedges analysis, together with the work of the Tasmanian Climate Action Council, will be the building blocks of our approach to climate change over the next decade. Our actions will also be guided heavily by the rules around the operation of Australia's new emissions trading scheme and extended renewable energy target, which should become clearer toward the end of 2008.

Notwithstanding that there is a great deal of work still to be done in these areas, many of the priorities for action to achieve our objectives in Tasmania are already clear:

The Government will take action on climate change in eight priority areas:

1. Government leadership
2. Consolidating Tasmania's position as the renewable energy State
3. Planning for future changes
4. Protecting Tasmania's natural stores of carbon
5. Improving Tasmania's transport system
6. Innovations in agriculture
7. Becoming energy smart
8. Building resilient and adaptive communities

Tasmania's Action Plan highlights the current actions being taken by the Tasmanian Government in these priority areas. It identifies new actions that will get underway this year, and it suggests other actions that may be taken in the future when we have more information arising out of developments like the wedges analysis, The Climate Futures for Tasmania Project, and the new emissions trading scheme.

Dealing with climate change will require all of us to get involved now and into the future. No, one person or organisation has all the answers, so the Government will continue to invite public comment on the priority areas identified in this Action Plan. This will build on the efforts our community has already made to contribute to the development of the *Draft Climate Change Strategy for Tasmania* and on the proposed *Climate Change (State Action) Act 2008*.

## I. GOVERNMENT LEADERSHIP

The Tasmanian Government has significant work underway to reduce its own greenhouse gas emissions. Actions include a comprehensive audit of the Government's emissions, workshops across government to identify climate champions who can drive behavioural change in their workplaces, immediate actions to ensure that the Government's vehicle fleet will be carbon neutral by July 2010, and making all Government air travel carbon neutral.

Soon, the Government will introduce minimum energy efficiency ratings for all new Government office buildings, including the new Royal Hobart Hospital and new Kingston Education Project. It will implement greater energy efficiency measures across departments, and consider a report on the introduction of solar panels and solar hot water systems in major Government-owned buildings. Procurement policy is also being amended to incorporate climate change considerations into all major purchasing decisions, and all Government agencies will detail their progress in reducing greenhouse emissions in their annual reports.

By taking action to reduce its own emissions the Government is leading by example. It will build on this leadership role in the broader Tasmanian community by putting an appropriate framework of policy, programs, legislation and regulations in place, by sponsoring further research to guide decision-making, and by actively supporting actions that can be taken by others in our community.

### NEW ACTION

- The Government will now take action to introduce Climate Change Impact Statements (CCIS) so that climate change will be factored into decision-making across Government. Climate Change Impact Statements will be included in all relevant Cabinet papers, Budget Review Committee papers and Budget submissions. A CCIS will provide a succinct summary of the climate change impacts associated with the relevant proposal or policy option being considered by Cabinet. It will inform and improve decision-making by enabling Cabinet to consider the impacts of a proposal or policy option within the broader context of the State's greenhouse gas emissions profile and future climate change risks. Climate Change Impact Statements will be integrated into Government processes by December 2008.

*Future action for Tasmania may also include:*

- Once the wedges analysis and Climate Futures project is complete, new information can be integrated into Government decision-making so that decisions are made with the best data available and in line with established emissions reduction targets.

## 2. THE RENEWABLE ENERGY STATE

Tasmania can aspire to generate 100 per cent of its electricity needs from renewable resources, and to become a net exporter of renewable and low-carbon electricity to the fossil fuel-dominated national electricity market. We can take steps toward such a future through energy efficiency measures aimed at households and businesses, and ongoing development of our renewable energy industry. Increased renewable energy capacity in Tasmania can ensure the continued security, efficiency and affordability of Tasmania electricity supplies and provide significant commercial and marketing opportunities in a carbon-constrained future. In the longer term, Tasmania has the potential to become a showcase for tomorrow's renewable energy technologies such as wave, tidal and geothermal.

The Tasmanian Government has already announced a substantial equity injection into Hydro Tasmania. This decision will protect and enhance Tasmania's ability to harness our abundant renewable energy and water development resources – resources which will be fundamental to Tasmania's future prosperity in a carbon-constrained economy. With this new funding now available, Hydro Tasmania will investigate the development of an additional 1000 gigawatt hours of output, representing an increase in energy generation of about 10 per cent, the amount of energy it would take to power an additional 100,000 Tasmanian households each year.

### NEW ACTION

- The Government will release a discussion paper on options for providing minimum feed-in tariffs to support householders and small energy consumers that use solar panels and other forms of domestic renewable energy and that contribute surplus energy to the electricity grid. This will be considered in the context of a recent national agreement through COAG for Australian governments to take a harmonised approach to feed-in-tariffs.

**Timeline:** A discussion paper will be released for public comment in August 2008.

*Future action for Tasmania may also include:*

- Providing new forms of support for exploration, investment and innovation in the renewable energy industry.
- Encouraging on-site renewable energy generation projects for buildings and industrial precincts.
- Promoting Tasmania as a global test-bed for trialling new forms of renewable energy.

## 3. PLANNING FOR FUTURE CHANGE

Continuing to invest in research on the regional and local effects of climate change is critical to help us plan for future risks and opportunities. Tasmania can play a leading national role through its approach to adaptive settlement and infrastructure planning, and to incorporating climate change into land use planning decisions. The challenge is to do this in a way that shares the burden and opportunities equitably across the community.

The Government has already embarked upon the landmark Climate Futures Project to understand in detail how climate change will impact different regions of Tasmania. In addition, following the release of the Sharples Report<sup>11</sup> in 2006, the Tasmanian Government undertook the 'Climate Change and Coastal Risk Management' project to build on the Sharples Report findings and to look at the risks that storm surge and sea level rise pose for built infrastructure and natural values and assets in low lying coastal areas.

After extensive consultation a draft revised State Coastal Policy has been developed and will soon be referred to the Resource Planning and Development Commission for assessment. There is also work underway on examining the impacts of climate change on natural systems, the reserve system, and the potential impacts for conservation management in Tasmania. The Government is also contributing to an assessment of likely impacts of climate change on the rock lobster fishery on the East Coast.

<sup>11</sup> [www.dpiw.tas.gov.au/internsf/WebPages/PMAS-6B56BV?open](http://www.dpiw.tas.gov.au/internsf/WebPages/PMAS-6B56BV?open)

## NEW ACTION

The Government will now:

- Extend the Climate Futures for Tasmania Project to cover infrastructure, with new funding to focus on risks in planning, design and operation of significant infrastructure assets in Tasmania. The information generated by this project will assist with the development of a profile of overall risk for significant infrastructure assets, and contribute to valuable modelling to identify longer-term engineering risks and mitigation actions.

**Timeline:** Work on the infrastructure project will commence soon and will be concluded with the final report of the Climate Futures for Tasmania in 2010.

- Incorporate climate change considerations into the Regional Planning Initiatives proposed for the three regions of the State and the subregional land use framework for the East Coast. The Government recognises that planning can ameliorate the effects of climate change by managing the form and density of urban growth, and facilitating more efficient uses of energy, transport and land. Planning can also be used to restrict development in areas prone to flooding, storm surge or sea level rise, and ensure that essential infrastructure is relocated or protected from severe weather events. The three regional planning strategies give strategic direction for future land use, transport and infrastructure development. They will consider increasing the density of development, encouraging a greater mix of uses, minimising impacts on natural areas, and avoiding areas subject to climate hazards such as sea level rise, storm surge, flooding and bushfire.

**Timeline:** Climate change considerations will be immediately incorporated in the north-west Regional Planning Initiative which will be finalised by early 2009. Climate change will be integrated into the north and south Regional Planning Initiatives and the East Coast subregional land use framework by mid-2009.

*Future action for Tasmania may also include:*

- Designing monitoring programs in partnership with regional communities to identify local impacts of a changing climate on business and communities.

- Developing a planning system that can be adapted to reduce the climate change risk to individuals and communities.
- Developing strategic infrastructure plans.
- Investing in more detailed natural hazard management and response planning.

## 4. PROTECTING TASMANIA'S NATURAL CARBON STORES

Tasmania has vast stores of carbon in the soils and vegetation in our world class reserve system and public and private forests. While almost 50 per cent of our native forests are protected from commercial activity, they are not safe from climate change. These carbon stores are particularly vulnerable to wild fire in an environment in which temperatures are higher, rainfall patterns are changing, and there are a growing number of days featuring strong winds and lightning. One of the most significant contributions that Tasmania can make to the level of global atmospheric greenhouse gases is to ensure that these protected natural carbon stores are also safe from catastrophic natural events and uncontrolled releases of the carbon they contain.

More broadly, the contribution of the forest industry to climate change and global warming is an issue of great importance for Tasmania. The introduction of an emissions trading scheme in Australia will fundamentally change the economics of the Tasmanian forest estate. Advocates and opponents of the sector cite various sources to support their position that the sector is either a net emitter or a net sequesterer of carbon. This has created confusion. That is why the Tasmanian Government has already asked the Garnaut Review to include an independent and transparent assessment of the role of the forest sector in addressing climate change, drawing on the best available science. The Government's approach to the forest sector and climate change will be strongly informed by the Review's findings.

*Future action for Tasmania may include:*

- Working with international partners in countries such as New Zealand and the United States to identify world's best practice in the management of natural carbon stores.

- Sponsoring research projects to understand existing carbon stores and the climate risks to which they are exposed, including the most effective methods for managing those risks.
- Developing a risk-mapping database of Tasmania's carbon stores with a particular focus on their susceptibility to fire.

## 5. IMPROVING TASMANIA'S TRANSPORT SYSTEM

Without new strategies, Tasmania's emissions from the transport sector are likely to continue to rise. Our lifestyle provides opportunities for successfully trialling innovative alternatives to car-powered transport systems, and for encouraging more walking and greater use of cycleways and public transport. Tasmania is also one of only a few places in the world where future plug-in electric vehicles can be powered from a renewable energy grid. This provides us with an opportunity to be a leader in promoting the new generation of transport vehicles.

The Government recently announced that it will provide \$4 million over three years to support the development of a well-planned and integrated network of community trails which provide recreational and transport opportunities, increase the connection of our communities, and promote alternatives to using fossil fuels for transport. Walking, bike and recreational trail networks in urban and urban fringe areas will be the focus. The Government is also running a CNG, LNG and Biofuels Infrastructure Attraction and Facilitation Project to promote the uptake of alternative transport fuels and to support the development of alternative fuels industry in Tasmania.

### NEW ACTION:

- The Government will now commission a short term Public Transport Review Report to identify options for increasing public transport usage in Tasmania. This will include an examination of the potential for use of hybrid, hydrogen and CNG-powered buses.

**Timeline:** The Report will be concluded and released publicly by December 2008.

*Future action for Tasmania may also include:*

- Promoting Tasmania internationally as a location for trialling electric and other alternative fuel vehicles.

- Providing insurance, registration and parking incentives for low-emission vehicles.
- Conducting driving education campaigns to promote fuel-efficient driving habits.

## 6. INNOVATIONS IN AGRICULTURE

Agriculture is one of the most important sectors of the Tasmanian economy. If we can adapt our approaches to a changing climate, then our sector has the potential to grow significantly as a result of climate change in southern Australia, and an increasing demand for our fertile agricultural land with access to water. While this growth will be good for our economy, it could also result in growing greenhouse gas emissions unless we also invest in innovation around low-emissions technology and management practices in the sector.

The Government's Drought Proofing Tasmania strategy makes \$220 million of State and Commonwealth money available for strategic irrigation development in Tasmania. Work is already well-progressed on a number of water development projects, through the Government's SMART Farming program, to minimise the short-term impact of the current drought and the long-term impact of climate change on the State's agricultural sector and rural communities. The newly established Tasmanian Irrigation Development Board will further drive the delivery of a suite of major water infrastructure projects that are economically, environmentally and socially sustainable.

The \$4.1 million Tasmanian Sustainable Yields Project is being established and will run until the end of 2009 to provide critical information on current and likely future water availability and demand until 2030. The analysis by CSIRO is supported by a collaboration of a range of stakeholders including the State Government. It will help governments, industry and communities consider the environmental, social and economic aspects of the sustainable use and management of the water assets of Tasmania, especially to support sustainable irrigation projects and water management planning.

In addition, in partnership with the Food Industry Council of Tasmania, the Government has commissioned a report on the future impact of climate change on Tasmania's food and beverage industries. This report, to be finalised by August 2008, will examine issues including the impact of likely changes in consumer preferences and market conditions.

## NEW ACTION:

- The Government will ask the Australian Innovation Research Centre (AIRC) to make recommendations on the best means to encourage innovation in Tasmania's agricultural sector in response to climate change. AIRC has conducted a significant research project on the role of technological innovation in responding to climate change. The Centre has also worked closely with groups like wine growers in the Coal River Valley to better understand their successful approach to growth through innovation. The AIRC will advise the Government on policy, program and legislative settings that it can immediately introduce in Tasmania to promote greater innovation in the agricultural sector.

**Timeline:** The report will be received by early 2009.

*Future action for Tasmania may also include:*

- Building a strong focus on agricultural research into the Government's partnership agreement with the University of Tasmania, which already includes a commitment to work cooperatively to ensure high quality science underpins decisions on responses to climate change in Tasmania. This could include work through the Centres of Excellence within the Tasmanian Institute of Agricultural Research, and with the Tasmanian Aquaculture and Fisheries Institute.
- Conducting climate-smart farm trials to pilot emissions reduction and carbon capture methods.
- Providing emissions measurement tools for the agriculture sector to help individual operators audit and reduce their emissions.
- Encouraging cooperative research and trialling of innovative carbon capture methods, including the use of bio char in Tasmania.

## 7. BEING ENERGY SMART

Energy efficiency makes sense. There is significant potential for many energy efficiency measures to be cost-neutral or cost-positive. Not only will greater energy efficiency enable Tasmania to export its clean electricity to the mainland, but it will also ease the transitional and ongoing impacts on households and businesses from the national emissions trading scheme and from future climate change.

Investing in energy efficiency for lower income households can provide them with houses that are more comfortable, affordable to operate and less susceptible to future electricity price rises. This is one reason why all Australian governments are working through COAG processes on a consistent approach to energy efficiency across the country.

The Tasmanian Government has conducted a Carbon Footprint Pilot Program. The program provided assistance to companies to develop strategies that allowed them to understand their carbon footprint and develop tools to reduce their emissions. Options for providing ongoing climate change business support within existing small and medium enterprise programs are currently being assessed. A similar program is being developed for the tourism industry in Tasmania.

The Government has also provided \$3.1 million to roll out the state-of-the-art energy-efficient traffic signals system using Extra Low Voltage/Light Emitting Diode (ELV/LED) technology. The new technology uses about 80 per cent less electricity and has a life span of 10 to 15 years, compared with only three years for current signal globes.

## NEW ACTION

The Government will now:

- Establish a research partnership with the University of Tasmania to conduct a desktop study on the benefits of investing in energy efficiency measures in low income housing. This research will inform a new program which provides free energy efficiency audits and insulation upgrades for selected low income housing in three 'test' areas across the State.

**Timeline:** The study will be conducted in 2008 with the program to be established by mid 2009.

*Future action for Tasmania may also include:*

- Creating major energy efficiency programs for business, households and schools.
- Setting more stringent mandatory, minimum energy efficiency standards for buildings across the state.
- Designing and supporting low-cost community energy efficiency audit programs.
- Supporting innovation in energy efficient technology and the energy efficiency service sector in Tasmania.

## 8. RESILIENT AND ADAPTIVE COMMUNITIES

The challenges of climate change in the 21st Century will place increasing pressure on individuals and communities to adjust the way they live and work. If we are to embrace these changes and capture the opportunities they present, then we must build even greater levels of self-reliance and resilience into our communities. This requires strong policy responses from governments on social equity, and it requires the engagement of the community in identifying solutions. We must build partnerships within the community, between business sectors and all levels of government. Effectively engaging our community in the climate change debate will be critical for success.

The Government recently announced that it will invest \$500,000 each year in a new Climate Change Community Grants Program to help communities throughout the State reduce their emissions and adapt to the local effects of climate change. This grants program will help those in our community best able to identify on-the-ground solutions to fund innovative approaches to climate change adaptation and greenhouse gas emissions reduction.

### NEW ACTION:

- The State Government will enter into a Partnership Agreement on Climate Change with Local Government. The Partnership Agreement will guide collaborative action to deliver on objectives recently agreed with the Premier's Local Government Council, namely, to reduce the carbon emissions of local government, educate Tasmanians on climate change, and share knowledge and information related to climate change.

**Timeline:** The draft Partnership Agreement is being developed for signing at the next meeting of the Premier's Local Government Council in August 2008.

- The Government will also immediately embark on an *Earn Your Stars* campaign to raise awareness of climate change in the general community and support Tasmanians with information about how they can contribute to solutions.

**Timeline:** A television advertising campaign will commence soon and will direct the public to more information on the Government's *Earn Your Stars* climate change website.

*Future action for Tasmania may also include:*

- Building a strong focus on climate change into the state school curriculum.
- Encouraging the establishment of skills development programs with a focus on sustainability and climate change to help businesses and communities develop the skills they need for the future, and as a possible export to other jurisdictions.
- Promoting more community, sectoral and government climate change partnerships.

## IMPLEMENTING ACTIONS

As this Framework has indicated, there are actions on climate change we are able to take immediately, and there are other actions we may be able take when we have more information. Attachment I to the Framework details the responsible agency and implementation timeframe for the Government's new climate change actions and actions underway. The Action Plan will be updated regularly as new actions and new information are taken into account.

By the end of 2009, with the completion of the wedges analysis, and the new emissions trading scheme design largely determined, Tasmania will be in a position to make informed decisions regarding sectoral and interim targets, and the most effective emission reduction actions to achieve those targets. By that time, and with the Tasmanian Climate Action Council well-established, we will also be well-positioned to capture the opportunities arising out of climate change, and be taking action to contribute to global solutions. On adaptation, once we are better informed through the COAG process and the National Adaptation Framework, and with preliminary information from the Climate Futures for Tasmania Project, we will be in a position to develop further actions to help Tasmanians adapt to climate change.

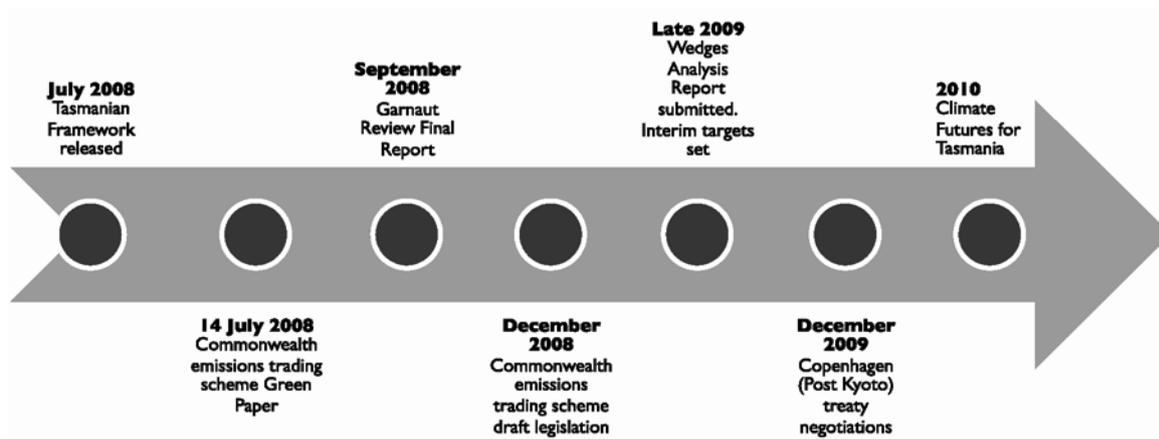
## EVALUATING AND REPORTING PROGRESS

Climate change is a new area of policy for governments throughout the world. It is an issue that requires us to 'learn by doing', to take risks and then to examine what went wrong and what was successful about the action taken. The Tasmanian Government will build in a clear reporting process that evaluates progress towards achieving our objectives and targets on climate change.

The Tasmanian Climate Change Office is already coordinating six-monthly whole-of-government reports to Cabinet on progress towards achieving the priorities identified to reduce the Government's own emissions. It will now expand those reports to include progress towards achieving the objectives identified in this Framework. This information will be made available to the public through the website. The first of these reports will be presented to Cabinet by December 2008.

The Government will determine interim and sector-based targets in the last quarter of 2009 taking into account the wedges analysis and advice from the Tasmanian Climate Action Council. The new Council will assess progress being made towards all emissions reduction targets for the State, and will provide biennial reports to the Minister which will be tabled in Parliament. The wedges analysis will provide a tool for assessing the merit of various future policy proposals and initiatives related to climate change. Once complete, this tool, together with the sector-based and interim targets, will be integrated into Government decision-making through the Cabinet's Climate Change Impact Statements.

## FRAMEWORK TIMELINE



## ATTACHMENT I - IMPLEMENTATION TIMETABLE FOR TASMANIA'S ACTION ON CLIMATE CHANGE

Action Area	Actions	Milestones	Agency	Status
Wedges Analysis of the Tasmanian economy	Project commences	Third quarter 2008	TCCO	New
	Report received	Last quarter 2009		
	Report and Government response released for public comment	Last quarter 2009		
Climate Change legislation	Climate Change Bill tabled in Parliament	July 2008	TCCO	Ongoing
	Establish Tasmanian Climate Action Council	December 2008		
	Set interim targets	2009		
Climate Futures for Tasmania Project	Commenced	2007	DPIW	Ongoing
	Finalised	2010		
Framework for Reducing the Tasmanian Government's Greenhouse Gas Emissions	Report on audit of Government's emissions received	August 2008	TCCO	Ongoing
	Agency's Emissions Reduction Plans finalised	December 2008		
	Carbon neutral vehicle fleet	July 2010		
Introduction of Climate Change Impact Statements	Introduce Climate Change Impact Statements in all relevant Cabinet papers, Budget Review committee papers and Budget submissions	December 2008	DPAC/DTF	New
	Discussion paper for minimum feed-in tariffs			
Extending the Climate Futures Project to include infrastructure	Release Discussion Paper on options to provide minimum feed-in tariffs to support domestic renewable energy	August 2008	DIER	New
	Final Report to Cabinet – dependent on COAG consideration of harmonised national approach to feed-in tariffs	October 2008		
	Infrastructure included in Climate Futures	2008		

<b>Action Area</b>	<b>Actions</b>	<b>Milestones</b>	<b>Agency</b>	<b>Status</b>
Climate change incorporated into Regional Planning Initiatives	Incorporation into north-west Regional Planning Initiative Incorporation into north and south Regional Planning Initiatives and East Coast subregional land use framework.	Early 2009 Mid-2009	Justice	New
Public Transport Review	Review commences Review report received	August 2008 December 2008	TCCO/ DIER	New
Community Trails Project	Project commences	2008/09	DEDT	Budget
CNG, LNG, Biofuels Infrastructure Attraction and Facilitation Project	Ongoing project	ongoing	DEDT	Ongoing
AIRC Report on agricultural innovation	Report received	Early 2009	TCCO	New
FIC report on food and beverage industry	Report finalised	August 2008	DEDT	Ongoing
Energy efficient traffic signals system	Implementation commences	2008	DIER	Budget
Low income housing energy efficiency project	University of Tasmania research project report Free energy audit and insulation program commences	By end 2008 Mid 2008	DHHS/ TCCO	New
Climate Change Community Grants Program	Develop criteria for program First funding round	October 2008 End 2008	TCCO	Budget
Partnership Agreement with Local Government on climate change	Partnership Agreement for consideration at Premier's Local Government Council meeting	August 2008	DPAC	New
Engaging the community on climate change	Launch <i>Earn Your Stars</i> awareness campaign	July 2008	TCCO	New