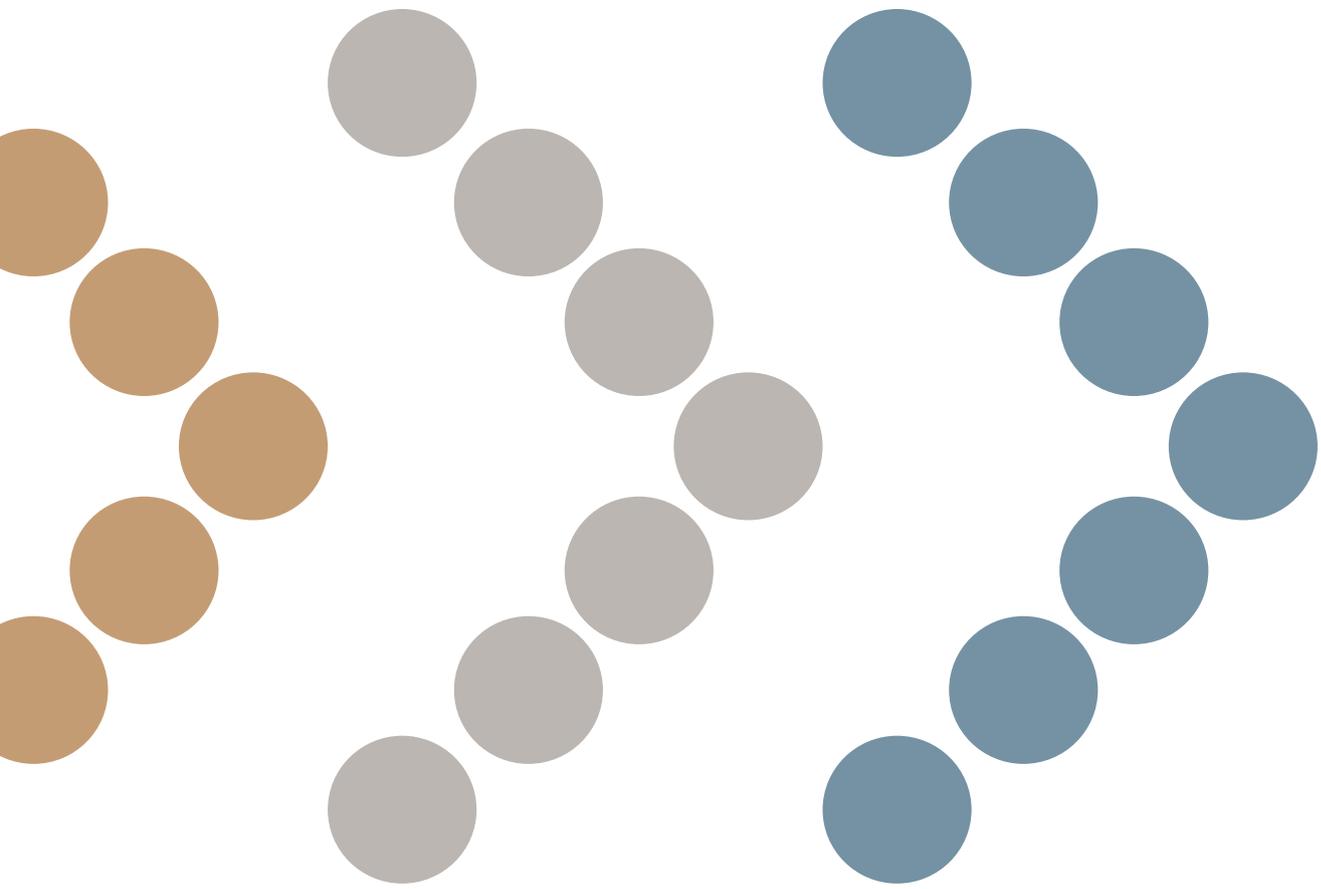




CLIMATE ACTION 21

R E P O R T C A R D 2 0 1 9



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**BUSINESS RESOURCE
EFFICIENCY PROGRAM**

The Action Learning environment proved invaluable as a place to think aloud, test existing ideas, and gain new ideas, friends and industry contacts. I highly recommend this program to any business that has a problem to solve, and we're now well on our way with ours!

RAY HOWE
Production Manager (& Plant Engineer),
Botanical Resources Australia

Climate Action 21: Report Card 2019
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Tasmanian Climate Change Office
Department of Premier and Cabinet

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A NOTE FROM THE MINISTER



THE HON PETER GUTWEIN MP

Minister for the Environment,
Parks and Heritage

The Tasmanian Government recognises climate change as a serious issue requiring local, national and international action.

Tasmania is a leader in responding to climate change, especially in the areas of renewable energy, and climate science and research.

It has been two years since the release of *Climate Action 21: Tasmania's Climate Change Action Plan 2017-2021* (Climate Action 21), which sets the Tasmanian Government's agenda for action on climate change. Climate Action 21 reflects the Government's commitment to addressing climate change and outlines how Tasmania is playing its role in the response to this global issue.

The Tasmanian Government has committed to strong leadership and action on climate change in our *Second Year Agenda – Building Your Future*.

Tasmania is a leader in terms of emissions. The latest greenhouse gas emissions figures for Tasmania confirm we have the lowest per capita greenhouse gas emissions in the country, and our latest inventory shows that for the sixth year in a row we have met our legislated emissions reduction target. The State's greenhouse gas emissions have declined by 95 per cent from 1990 levels.

Tasmania is also a leading performer globally. The State's emissions, at 1.7 tonnes of CO₂-e per person, are well below the global average of nearly 5 tonnes.

However, we can capitalise further on our achievements to reduce the State's greenhouse gas emissions, as we work towards achieving our commitment to zero net emissions. The Tasmanian Government has committed to making Tasmania renewable energy self-sufficient by 2022. This will require up to 1,000 gigawatt hours of additional renewable energy generation in Tasmania. To meet this target and support the rest of the country to move to a renewable energy future, we are investing significantly in renewable energy, including \$30 million for the first stage of Battery of the Nation and \$56 million with the Australian Government to move the Marinus Link project forward.

Our target and our investment will further cement Tasmania's place as the renewable energy battery of the nation, enhance energy security and reduce Tasmania's greenhouse gas emissions.

In addition, we have steadily built on our achievements since the 2018 release of the first Climate Action 21 Report Card. This year's highlights include:

- **Power\$mart Businesses program:** providing support to Tasmanian businesses to better understand and reduce their energy use;
- **Electric Vehicle ChargeSmart Grants Program:** Tasmania is again one of the leaders in this area, awarding over half a million dollars in grant funding to support the installation of 26 fast and destination charging stations in strategic locations across Tasmania in the rollout of a statewide public electric vehicle charging network.
- **Climate Change and Health Roundtable:** bringing together local, national and international experts to help build resilience to the health challenges of a changing climate;
- **Coastal Hazards Management for Existing Settlements and Values project:** identifying key issues for existing settlements and values, including holding four information gathering workshops across the State;
- **Power\$mart Homes:** commencing planning a program to help low income Tasmanian households stay warm, save money and reduce greenhouse gas emissions by providing energy efficiency information, undertaking energy efficiency audits and low cost upgrades;
- **Business Resource Efficiency Program:** conducting waste audits for participating businesses to help them reduce waste and operating costs, and drive productivity gains;
- **Smarter Fleets Program:** assisting Tasmanian Government, local government and heavy vehicle fleets to reduce greenhouse gas emissions and costs, including preparing for electric vehicle uptake;
- **Tasmanian Climate Symposium:** bringing together over 60 key decision makers in government and industry, and Tasmanian researchers to network, to share learnings and to work collaboratively to translate climate research into better policy and practice;
- **Climate change research:** undertaking research to understand the likelihood of a range of extreme weather events and natural hazards overlapping, and to identify options to manage these risks; and
- **Climate Resilient Councils program:** supporting councils to understand and manage climate-related risks likely to affect their operations and service delivery.



INTRODUCTION

In 2017 the Tasmanian Government released *Climate Action 21: Tasmania's Climate Change Action Plan 2017-2021* (Climate Action 21) and the *Climate Action 21 Implementation Plan*.

Climate Action 21 sets the Tasmanian Government's agenda for action on climate change including reducing emissions, preparing for and responding to the impacts of a changing climate and supporting the transition to a low carbon economy.

The Department of Premier and Cabinet's Tasmanian Climate Change Office (TCCO) is responsible for coordinating the implementation of Climate Action 21 and reporting on progress.

The TCCO implements Climate Action 21 in collaboration with all levels of government, business and industry, the scientific community, peak organisations and the broader Tasmanian community. This includes seeking the views of others to inform the scope and delivery of programs and projects.

Each year, the TCCO reports on progress towards the implementation of Climate Action 21. This is the second report card which shows progress made from July 2018 to June 2019.

KEY ACHIEVEMENTS



**POWER\$MART
BUSINESSES
PROGRAM**



**POWER\$MART
HOMES
PROGRAM**



**BUSINESS RESOURCE
EFFICIENCY
PROGRAM**



**ELECTRIC VEHICLE
CHARGESMART
GRANTS PROGRAM**



**SMARTER
FLEETS
PROGRAM**



**CLIMATE CHANGE
AND HEALTH
ROUNDTABLE**



**CLIMATE RESILIENT
COUNCILS
PROGRAM**



**COINCIDENT
EXTREME EVENTS
RESEARCH**



**TASMANIAN
CLIMATE
SYMPOSIUM**



**COASTAL HAZARDS
MANAGEMENT
FOR EXISTING
SETTLEMENTS AND
VALUES PROJECT**

NATIONAL AND INTERNATIONAL CONTEXT

Setting the scene: recent observations in Tasmania's climate and developments in climate policy

Since the release of Climate Action 21, Tasmania has experienced significant climate events including bushfires, floods, heatwaves, prolonged dry periods and unseasonal snowfall. These climate events present substantial risks for business, industry, local government and the broader community

Increasingly, it is becoming recognised on a global scale that all organisations, including government and businesses, need to better consider climate change risks.

RECENT EXTREME WEATHER EVENTS

In the last three years, the State has experienced two significant bushfire events, a record marine heatwave off the East Coast, a prolonged dry period creating energy security concerns, the worst statewide flooding seen in 40 years and ongoing coastal erosion and inundation events around the State.

In January 2019, Tasmania experienced a significant bushfire event, with hundreds of dry lightning strikes causing extensive fires in the Central Plateau, South-West and West Coast. The fires burnt over 200,000 hectares, destroyed homes, significantly impacted the Tasmanian Wilderness World Heritage Area (TWWHA), and caused respiratory and other health impacts from smoke. This followed a significant bushfire event in 2016, which also caused extensive damage to the TWWHA.

CLIMATE CHANGE PROJECTIONS

The Bureau of Meteorology's annual climate report records ongoing, long-term climate change interacting with underlying natural variability. Australia has warmed by over 1°C since 1910, with most of the warming since 1950.

The Intergovernmental Panel on Climate Change's Fifth Assessment Report shows that these historical observations are going to accelerate, with extreme weather events becoming more frequent and intense in a changing climate.

This is supported by the Climate Futures for Tasmania project, our most important source of climate change projections. It found Tasmania is facing: significant changes in rainfall patterns; a rise in annual temperatures and more hot summer days; longer fire seasons and more days at the highest range of fire danger; rising sea levels; ocean acidification; and increased East Coast water temperatures.

These changes are expected to translate into severe climate events, including compound events that result from the combined influence of extremes in multiple variables that occur simultaneously.



TASMANIA'S GREENHOUSE GAS EMISSIONS

Each year, the Australian Government releases its annual State and Territory Greenhouse Gas Inventories. The latest figures, for the 2017 reporting period, were released in June 2019.

Tasmania's net emissions in 2017 were 0.87 megatonnes (Mt) of carbon dioxide equivalent (CO₂-e), which is a 95 per cent decrease from the 1990 baseline level of 18.61 Mt CO₂-e.

This result indicates that for the sixth year in a row Tasmania has achieved its legislated emissions reduction target under the *Climate Change (State Action) Act 2008*, of 60 per cent below 1990 baseline levels by 2050.

At 0.87 Mt CO₂-e, Tasmania has the lowest net emissions of all other Australian states and territories in 2017. Tasmania's low emissions status is variable over time and the carbon sink in our managed forest estate is not fixed. It is influenced by a range of factors, including changes to forest management practices; changing harvesting regimes in response to local and global markets for Tasmanian-grown wood products; and the impacts associated with a future changing climate, such as increased bushfire risk.

A carbon, or emissions, sink removes more carbon than it emits. The removed carbon is stored, often in the form of growing vegetation. Tasmania's forests offset the majority of our greenhouse gas emissions and are reported in our national emissions inventory in the land use, land use change and forestry (LULUCF) sector.

With the exclusion of emissions from the LULUCF sector, the emissions intensity of Tasmania's economy has demonstrated a downward trend, indicating Tasmania is successfully transitioning to a lower carbon economy.

Excluding emissions from the LULUCF sector, the annual emissions across the rest of the Tasmanian economy increased by only 4.9 per cent between 1990 and 2017. This is considered significant, given that during this period Tasmania's Gross State Product increased by around 74 per cent and the State's population increased by around 13 per cent. More information about Tasmania's greenhouse gas emissions is available on the TCCO website at www.climatechange.tas.gov.au.

NATIONAL CLIMATE CHANGE POLICY

The Australian Government, as a party to the United Nations Framework Convention on Climate Change, joined almost 200 other countries in reaching a global climate agreement at the 21st Conference of the Parties in Paris in December 2015 (Paris Agreement).

The Paris Agreement, which was ratified by Australia on 9 November 2016, sets a goal to hold the average global temperature increase to well below 2 degrees Celsius.

By 2030 Australia has committed to an emissions reduction target of between 26 and 28 per cent below 2005 levels.

On 25 February 2019, the Australian Government announced a \$3.5 billion Climate Solutions Package to deliver on Australia's 2030 Paris climate commitments.

The Package includes a \$2 billion Climate Solutions Fund being delivered over 15 years from 2018-19. The Climate Solutions Fund partners with farmers, local governments, remote indigenous communities, and small businesses to deliver practical climate solutions across the economy that reduce greenhouse gas emissions.

The Australian Government also announced \$56 million in funding from the Climate Solutions Package to accelerate delivery of a second Bass Strait electricity supply interconnector and increase pumped hydro power projects that will make Tasmania the 'battery of the nation'.

Projects such as the Marinus Link and Battery of the Nation pumped hydro can lock in our island's energy security and demonstrate the Tasmanian Government's positive contribution in the transition to a low carbon future.

The Battery of the Nation initiative sets a blueprint for how Tasmania's renewable resources are developed over the coming decades.



DPAC image library: 'Commuting to work'

INTERNATIONAL CLIMATE CHANGE POLICY

In December 2018 the United Nations Framework Convention on Climate Change (UNFCCC) 24th Conference of the Parties (COP24) was held in Katowice, Poland. A key outcome of the meeting was the development of the Katowice Rulebook needed for global implementation of the Paris Agreement from 2020.

On 8 October 2018, the Intergovernmental Panel on Climate Change (IPCC) released the Special Report on Global Warming of 1.5°C. This Report found that human activities have caused approximately 1.0°C of global warming above pre-industrial levels. It identifies a broad range of climate-related impacts that are projected to be lower at 1.5°C of global warming than at 2.0°C.

LEGAL LIABILITY AND FINANCIAL RISK

Recent developments in this area include an update to the legal opinion on directors' duties in relation to climate change risks; a statement by the Reserve Bank of Australia on the economic impact of climate change in Australia; and advice from international ratings agencies on the inclusion of climate-related risks in their assessment.

Following these developments, Australia's Centre for Policy Development has released a discussion paper on the legal obligations of public sector corporate boards and directors to consider climate-related risk.

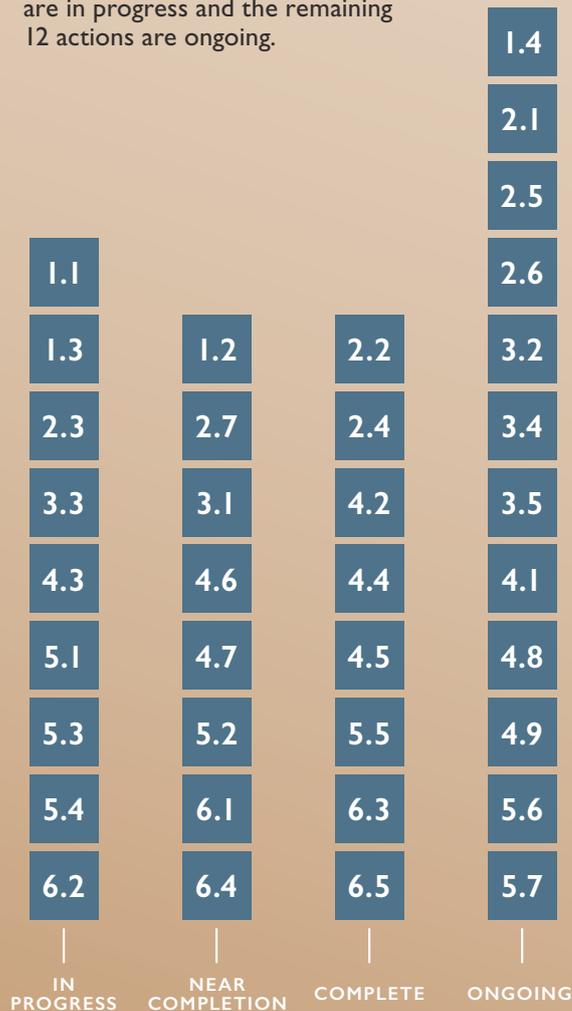
IMPLEMENTATION PROGRESS

Summary of progress against Climate Action 21 actions – 2019

Climate Action 21 has 37 actions across six priority areas. The purpose of this Report Card is to show progress against each of the actions contained in Climate Action 21. The status of each action is shown as: In progress, Nearing completion, Complete, or Ongoing.



Since the launch of Climate Action 21, eight actions have been completed and eight actions are nearing completion. Nine actions are in progress and the remaining 12 actions are ongoing.





UNDERSTANDING TASMANIA'S FUTURE CLIMATE



This priority area aims to provide up-to-date information on climate change projections and impacts, and tailor this information to support decision making across key industry sectors.

Action	Timeframe	Responsibility	Commentary	Status
1.1 Review climate change models, identify research gaps and opportunities, and determine priority research projects to update Tasmania's climate science	Expected completion FY 2020-21	DPAC (TCCO)	<p>A review of climate change research in Tasmania has identified research opportunities in a number of priority sectors, including agriculture, water infrastructure, biosecurity, tourism, aquaculture, and fisheries.</p> <p>A number of priority research projects have commenced and consultation with the scientific community, industry and governments is ongoing.</p>	 IN PROGRESS
1.2 Undertake research to build our understanding of Tasmania's vulnerability to coincident extreme events and their impacts	Expected completion FY 2020-21	DPAC (TCCO)	<p>Research is underway to understand the likelihood of a range of extreme weather events and natural hazards overlapping, and to identify options to manage risks identified through the project. A workshop has been held to determine priority weather events likely to overlap in Tasmania.</p>	 NEARING COMPLETION

Action	Timeframe	Responsibility	Commentary	Status
1.3 Provide sector-specific information on Tasmania's future climate through tailored climate information and decision support tools for end users	Expected completion FY 2020-21	DPAC (TCCO)	The TCCO, in partnership with Hydro Tasmania, hosted the inaugural Tasmanian Climate Symposium. The Symposium brought together key decision makers from government and industry, and Tasmanian researchers, to network, share learnings and work collaboratively to translate climate research into better policy and practice.	 IN PROGRESS
1.4 Support an ongoing commitment to the National Climate Science Centre in Hobart	Ongoing	DPAC (TCCO)	The Tasmanian Government continues to advocate for the maintenance of a strong scientific research capability in Tasmania.	 ONGOING

2 ADVANCING OUR RENEWABLE ENERGY CAPABILITY



This priority area aims to advance our renewable energy capability by supporting national energy security solutions in the transition to a low carbon generation network and continuing to work with Tasmanian Government agencies, local government and business to improve energy efficiency.

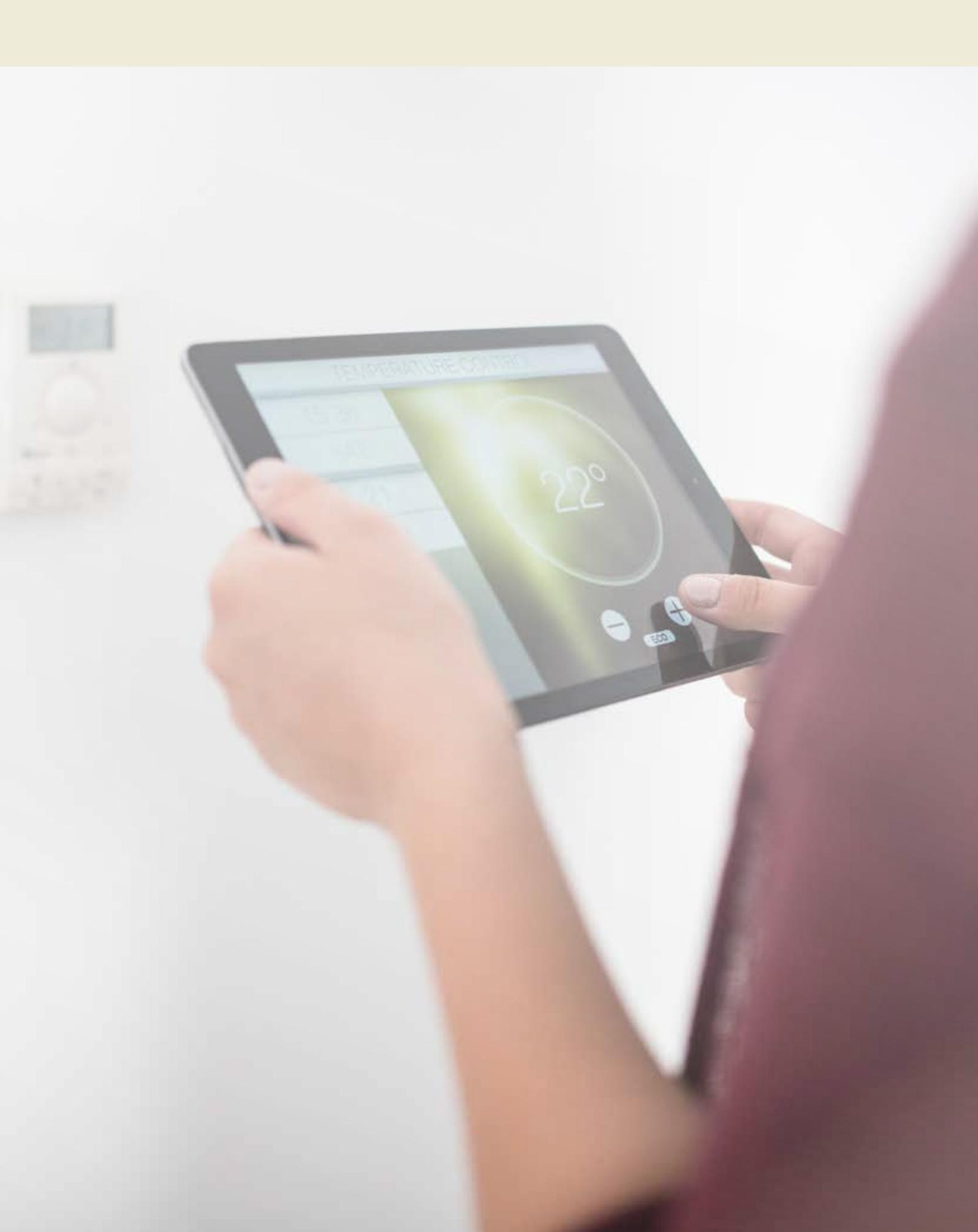
Action	Timeframe	Responsibility	Commentary	Status
<p>2.1 Promote Tasmanian and National emissions reduction and energy security by continuing to invest in hydro-electricity assets, considering the findings of relevant studies to further Tasmania's renewable electricity generation, progressing opportunities for further renewable energy development, and advocating for Tasmania to play a significant role in national energy security</p>	Ongoing	State Growth	<p>The Tasmanian Government has committed to make Tasmania energy self-sufficient with an additional 1,000 gigawatt hours of on-island renewable energy generation by the end of 2022.</p> <p>Key projects are underway, including a feasibility study into locations for pumped-hydro and a feasibility study into a second Bass Strait interconnector (Project Marinus).</p>	 ONGOING
<p>2.2 Provide resources and guidance materials to support businesses and households to access the Tasmanian Energy Efficiency Loan Scheme or other finance options</p>	Expected completion FY 2018-19	DPAC (TCCO)	<p>The \$40 million Tasmanian Energy Efficiency Loan Scheme (TEELS) closed in April 2019.</p> <p>The TCCO provides information on the practical actions households and businesses can take to improve energy efficiency.</p>	 COMPLETE

Action	Timeframe	Responsibility	Commentary	Status
2.3 Work with businesses to maximise energy efficiency and identify energy savings projects eligible for application to the Tasmanian Energy Efficiency Loan Scheme or other finance options	Expected completion FY 2019-20	DPAC (TCCO)	The Power\$mart Businesses program offers funding to eligible Tasmanian businesses for energy efficiency audits, and provides an audit report detailing practical information about ways to improve energy efficiency. Improved energy efficiency can help lower power bills, protect against future energy price rises, and reduce greenhouse gas emissions. Eleven applications from Tasmanian businesses were received, with audits underway for six of these businesses.	● ● ● ● IN PROGRESS
2.4 Determine the suitability of Environmental Upgrade Agreements and other financing options to support energy upgrades in Tasmania's non-residential building stock	Expected completion FY 2017-18	DPAC (TCCO)	An Environmental Upgrade Agreements (EUAs) feasibility study has been completed. EUAs are financial arrangements that provide low-cost long-term loans to building owners to improve energy efficiency. The Final Report indicated that EUAs do not currently present a viable option for Tasmania. This conclusion was informed by the views of local stakeholders, the level of success of similar schemes in place in other Australian jurisdictions, and the number of upgrade projects that would be required for a Tasmanian EUA scheme to be economically viable.	● ● ● ● ● ✓ COMPLETE
2.5 Work with local government and service providers to support the delivery of energy efficient street lighting and smart controls projects	Ongoing	DPAC (TCCO)	The Tasmanian Government participated in a workshop with local government and TasNetworks to discuss the barriers to the rollout of high efficiency street lighting technologies and smart control systems. Work continues to provide efficient and cost effective solutions to increase the numbers of high efficiency street lights.	🔄 ONGOING

Action	Timeframe	Responsibility	Commentary	Status
2.6 Support Tasmanian Government agencies to monitor and report energy usage and greenhouse gas emissions	Ongoing	DPAC (TCCO)	Implementation of a replacement whole-of-government energy use and emissions monitoring software platform is expected to be completed by mid-2019.	 ONGOING
2.7 Improve the energy efficiency of Tasmanian Government owned and leased buildings through energy audits, cost-effective capital upgrades and a behaviour change program	Ongoing	DPAC (TCCO)	<p>Energy audits have been completed at a number of agency sites including Ogilvie and Taroona High Schools for DoE and the Hobart Fire Station and Regional Office for DPFEM.</p> <p>DPIPWE is currently arranging for energy audits to be carried out at the New Town and Mt Pleasant laboratories.</p>	 NEARING COMPLETION



DPAC image library: Woolnorth Wind Farm



3 REDUCING OUR TRANSPORT EMISSIONS



This priority area aims to reduce transport emissions by promoting the uptake of electric vehicles and alternative forms of transport, and optimising the use of existing vehicles.

Action	Timeframe	Responsibility	Commentary	Status
<p>3.1 Assess potential approaches for a market-led statewide rollout of electric vehicle charging infrastructure and work with local government, businesses and industry to improve charging network infrastructure in Tasmania</p>	<p>Expected completion FY 2019-20</p>	<p>DPAC (TCCO)</p>	<p>The Electric Vehicle ChargeSmart Grants Program has provided over \$500,000 in grant funding to expand the rollout of a statewide electric vehicle charging network for local users and visitors.</p> <p>This funding supports both fast chargers, which enable electric vehicle users to charge promptly to complete longer routes or return journeys, and destination chargers, which provide a slower rate of charge and are suited to destinations where electric vehicles are typically parked for an hour or more.</p> <p>Fast charging grants of up to \$50,000 have been provided to seven organisations to install a total of 14 Direct Current (DC) fast charging stations at 12 locations across the State.</p> <p>Destination charging grants of \$2,500 have been provided to 11 organisations to install Alternating Current (AC) electric vehicle charging stations.</p> <p>The charging infrastructure supported through this grants program is due to be installed by mid-2020.</p>	<p>● ● ● ● ● ● ● ●</p> <p>NEARING COMPLETION</p>

Action	Timeframe	Responsibility	Commentary	Status
<p>3.2 Establish an electric vehicle working group to identify barriers, issues and opportunities, and provide advice to the Tasmanian Government on the development of a coordinated approach to support the uptake of electric vehicles in Tasmania</p>	Expected completion FY 2018-19	DPAC (TCCO)	<p>The Tasmanian Government Electric Vehicle Working Group was established in October 2017. The Working Group continues to bring together key partners to develop a coordinated approach to support the uptake of electric vehicles in Tasmania. The Working Group is also identifying and progressing priority areas of action to support electric vehicle uptake; and identifying and exploring barriers to electric vehicle uptake.</p>	 ONGOING
<p>3.3 Extend the Smarter Fleets program to improve the efficiency of heavy vehicle fleets and additional light vehicle fleets</p>	Expected completion FY 2019-20	DPAC (TCCO)	<p>The Tasmanian Government's Smarter Fleets Program aims to reduce vehicle fleet greenhouse gas emissions and fuel costs by providing tailored guidance and support to fleet managers.</p> <p>The Smarter Fleets Program - Heavy Vehicles is supporting six heavy vehicle fleets in Tasmania to improve efficiency, reduce fuel expenditure and carbon emissions and to consider alternative technology, including hydrogen and electric vehicles.</p> <p>The Smarter Fleets Program Electric Vehicles in Local Government is supporting nine Tasmanian councils to prepare to introduce electric vehicles in to their fleets. The Program includes an analysis of the existing fleet to calculate the environmental benefit and cost reductions that electric vehicles can offer.</p>	 IN PROGRESS

Action	Timeframe	Responsibility	Commentary	Status
3.4 Support public transport uptake through improved service provision and use of planning tools to align developments with effective public transport networks	Ongoing	State Growth	<p>The Tasmanian Government has made significant progress on implementing a new public transport network aimed at providing better access to employment, education and services, and the overall connectivity of Tasmanians.</p> <p>Progress to date includes improving bus services to Sorell, Margate, New Norfolk, Huonville and the West Coast. There are some positive early indications that the changes introduced in the South are increasing bus services patronage. The remaining rollout of the new network will occur during FY 2019–20.</p>	 ONGOING
3.5 Improve the efficiency of the Tasmanian Government transport fleet by extending the Smarter Fleets program, reviewing the Green Vehicle Guide minimum standards, and identifying and addressing barriers to the uptake of electric vehicles in the Government fleet	Ongoing	DPAC (TCCO)	<p>The Smarter Fleets Program – Electric Vehicles in the Tasmanian Government is supporting Tasmanian Government agencies to prepare to integrate electric vehicles in their fleets. The Program will identify barriers and appropriate practical solutions to electric vehicle uptake, and work with agencies to develop an effective plan and build commitment to integrate electric vehicles into their fleets to achieve financial and environmental goals.</p>	 ONGOING



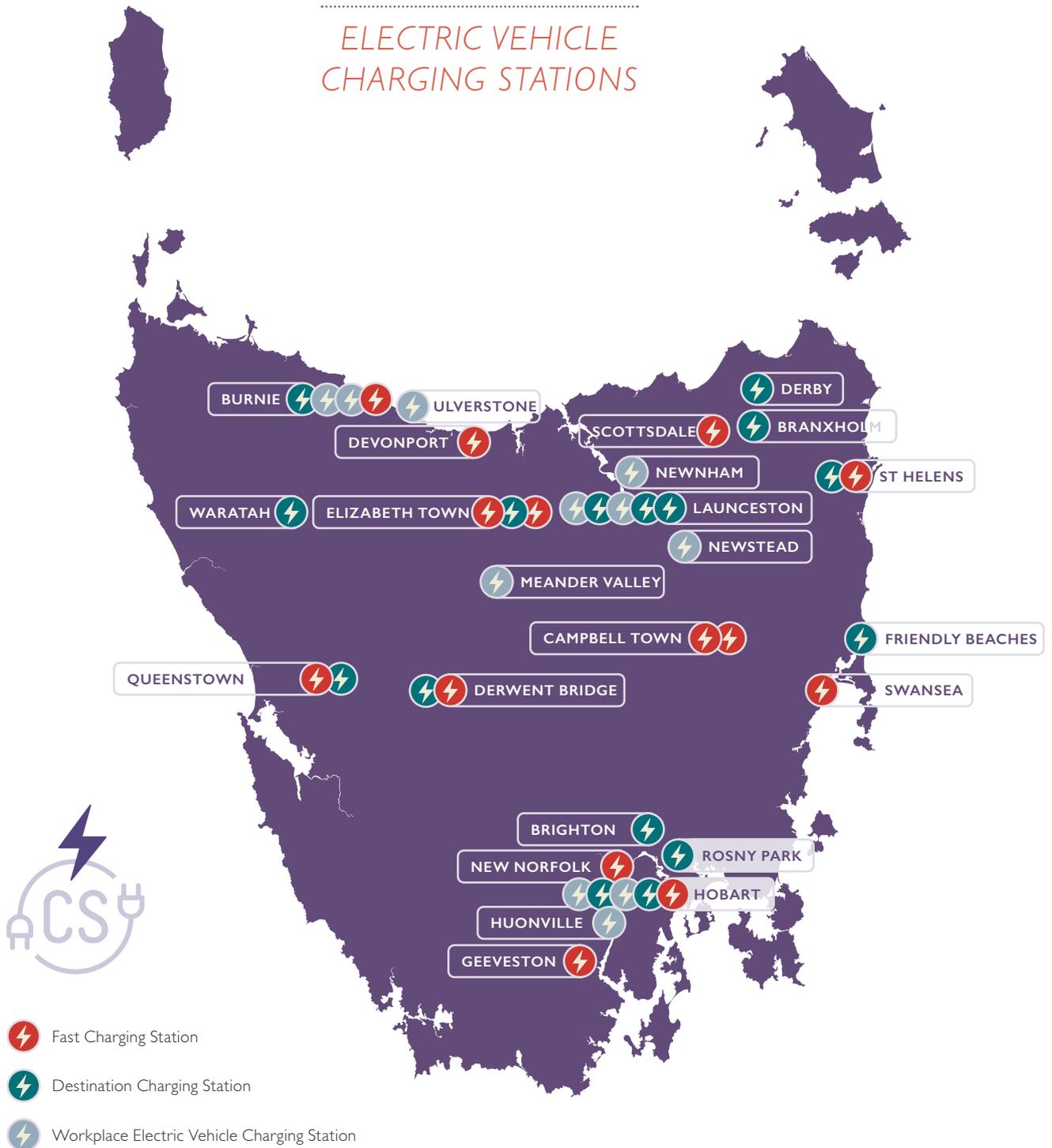
The work of the Tasmanian Climate Change Office has been pivotal in ensuring that Tasmania can take up electric vehicles. The ChargeSmart grants will allow Tasmanians with electric vehicles to travel almost anywhere in Tasmania without range anxiety. The working groups facilitated by the office help us remove the other barriers to electrification of transport.

LAURA JONES
EV Working Group Member,
TasNetworks



ChargeSmart

ELECTRIC VEHICLE CHARGING STATIONS



Under ChargeSmart, Destination and Fast Charging stations are to be installed by end July 2020.

4 GROWING A CLIMATE-READY ECONOMY



This priority area aims to create a climate-ready economy by supporting businesses and agricultural producers to reduce their emissions, be prepared for the impacts of climate change and leverage opportunities.

Action	Timeframe	Responsibility	Commentary	Status
<p>4.1 Attract investment and jobs by using our clean energy advantage and making climate change projections easily available and accessible for investors</p>	Ongoing	<p>Coordinator-General DPAC (TCCO)</p>	<p>The Office of the Coordinator-General continues to promote the renewable energy sector in Tasmania across a wide variety of sectors.</p> <p>The State's renewable energy advantage is frequently highlighted to potential investors through marketing collateral, presentations and tailored responses.</p> <p>The Coordinator-General is working across a number of renewable energy projects, including wind and solar projects, providing support to project proponents as required.</p>	 ONGOING
<p>4.2 Work with farmers to reduce fertiliser-related emissions and costs by continuing to deliver the Fert\$mart program in partnership with DairyTas</p>	Complete	DPAC (TCCO)	<p>To date, 200 Fert\$mart plans covering 60,000 hectares have been developed for Tasmanian dairy farms. This represents nearly 50 per cent of the State's dairy farms.</p> <p>The Tasmanian Government has provided financial assistance of \$27,500 to local farmers to install the infrastructure necessary to implement the effluent management component of their Fert\$mart plans. This funding provided the momentum for practical on-farm infrastructure works totalling \$431,000, and an additional 230 hectares of land being irrigated with effluent and an additional seven megalitres of effluent storage.</p>	 COMPLETE

Action	Timeframe	Responsibility	Commentary	Status
4.3 Undertake a business resource efficiency program to assist small- and medium-sized businesses to reduce their emissions and operating costs through resource efficiency initiatives, and building industry capacity	Expected completion FY 2019-20	DPAC (TCCO) <i>State Growth</i>	Eleven businesses across a range of sectors have signed up to the Business Resource Efficiency Program and waste audits for each participating business have been completed. Waste minimisation projects were identified for each business as a result of the waste audits. Businesses are now working together through facilitated workshops to implement their waste minimisation projects.	● ● ● ● IN PROGRESS
4.4 Work with the agricultural sector to improve energy efficiency and reduce emissions by updating the online energy self-audit tool and developing guidance materials	Expected completion FY 2017-18	DPIPWE <i>DPAC (TCCO)</i>	An interactive tool has been developed to assist farms with energy management and energy self audits. Features of the tool include identifying energy use, setting benchmarks and targets, and implementing energy and cost saving measures. The online calculator tool that complements this manual is also available to aid in conducting energy self-audits of farms.	● ● ● ● ● ✓ COMPLETE
4.5 Support the resilience of small- and medium-sized businesses to extreme events by extending the Disaster Planning and Recovery for Tasmanian Businesses project, which involves workshops and tailored resources	Complete	DPAC (TCCO) <i>State Growth</i>	This action was completed in 2017-18, with a series of workshops across regional Tasmania, supporting 48 Tasmanian businesses to undertake business continuity planning to prepare for and respond to extreme climatic events.	● ● ● ● ● ✓ COMPLETE



TCCO's funding has provided the momentum for significant on-farm infrastructure works to help farmers implement their Fert\$mart Plans. This includes practical solutions to extend effluent irrigation, which will provide numerous benefits for farmers including financial savings, improved water quality and reduced conventional fertiliser inputs through maximising the use of effluent as a fertiliser.

JONATHAN PRICE
Executive Officer, DairyTas

Action	Timeframe	Responsibility	Commentary	Status
4.6 Provide information on climate change risks and opportunities through Enterprise Suitability Mapping to support future decision making for the agricultural sector	Ongoing	DPIPWE DPAC (TCCO)	DPIPWE is updating the existing Enterprise Suitability Mapping project to incorporate climate change projections. All Enterprise Suitability layers have been re-modelled with updated soil and climate information and refined crop rules developed with each industry. These are currently being loaded to LISTmap. These layers are supported by new Vulnerable Soil layers (Erosion, Salinity, Sodicty and Poor Drainage) that are now also available on LISTmap. A range of component soil and climate layers have been made available on LISTmap as a result of stakeholder requests. The Climate Change layers are currently being developed.	●●●●●●●● NEARING COMPLETION



BUSINESS RESOURCE EFFICIENCY PROGRAM

Through the BREP program so far, I have learnt that even though the businesses we all work in are great and varied, we all seem to share common issues and all have the desire to make change as best we can in our own spaces.

In our business we are now actively separating our waste into recycling and general waste. We are looking at how to further increase our capacity to reuse some of our waste, such as cardboard and shredded paper. We have begun the process of auditing our waste collection contracts and are currently investigating which contractors can meet our recycling needs either now or in the near future.

Action Learning has been valuable to me as it has provided me with opportunities to work with like-minded people with diverse experiences. Bouncing ideas around in an accepting and supportive environment has been an amazing opportunity; being able to understand and value how other people can approach and break down issues/projects and look at them from a different perspective has already given me skills, which I now apply in both my work place and personal life. The hands on approach suits my learning style and stepping out of my own space, physically going to another workspace and seeing how other people do things, has been invaluable.

ANNA ROBERTSON Production Manager,
Bridestowe Lavender Estate



Action	Timeframe	Responsibility	Commentary	Status
4.7 Develop a new waste management action plan for Tasmania which includes a focus on emissions reduction	Expected completion FY 2018-19	DPIPWE	The Tasmanian Government has released its draft Waste Action Plan for public consultation. Two key proposed initiatives included in the Plan are: a beverage container refund scheme; and a statewide levy on waste being dumped in landfill. This levy is proposed to replace the many council levies that already exist with funds to be focused on future waste and recycling infrastructure and programs. The Plan will have a strong focus on reducing emissions from the organic waste stream in Tasmania.	● ● ● ● ● ● NEARING COMPLETION
4.8 Deliver the five proposed Tranche II irrigation development schemes, and investigate the feasibility of Tranche III schemes, to provide water surety for the agricultural sector in a changing climate	Ongoing	Tasmanian Irrigation DPIPWE	The transformation in Tasmanian regional, large-scale irrigation development has made highly reliable water supplies available for growth in agriculture. The delivery of the Tranche II irrigation schemes is continuing on-schedule, with four schemes completed and operational and the fifth scheme due for completion in February 2020. A feasibility assessment of projects for a possible third tranche of irrigation scheme development has been completed.	 ONGOING
4.9 Invest in skills to prepare our industry sectors, regional communities and workforce for a changing climate	Ongoing	State Growth	The Tasmanian Government, through Skills Tasmania, continues to work with industry, community and regional partners to understand their current and future training needs. Skills Tasmania provides subsidised training in agriculture, aquaculture and primary industries, with environmental sustainability and climate change being an important context for the delivery of nationally recognised training for these sectors.	 ONGOING

5 BUILDING CLIMATE RESILIENCE



This priority area aims to build climate resilience by enhancing our capacity to withstand and recover from extreme weather events, and better understand and manage the risks of a changing climate.

Action	Timeframe	Responsibility	Commentary	Status
<p>5.1 Build community resilience by raising awareness of flood risks and implementing a statewide system for flood warnings and alerts</p>	<p>Expected completion FY 2019-20</p>	<p>DPFEM (SES)</p>	<p>To continue to build community resilience to climate change, SES has developed a website, brochures, and Home Emergency Plan template to assist householders prepare and plan for floods.</p> <p>In 2019-20, SES will deliver the Community Flood Planning Pilot Project. The project will provide people living and working in a selected number of flood prone Tasmanian communities with locally specific information to assist them make informed plans about what they will do before, during and after a flood event.</p> <p>SES is developing a statewide system of flood warnings and alerts.</p>	<p>● ● ● ● ● IN PROGRESS</p>
<p>5.2 Develop online resources to help communities understand their exposure to natural hazards</p>	<p>Ongoing</p>	<p>DPAC (OSEM)</p>	<p>DPAC is finalising RiskReady, an online resource for public information about the nature and extent of natural hazards affecting their property and for advice on managing risks. It will also have links to other Government agencies for further information.</p>	<p>● ● ● ● ● ● ● ● NEARING COMPLETION</p>

Action	Timeframe	Responsibility	Commentary	Status
5.3 Work with local government and regional bodies to embed climate change adaptation into strategic and financial decision making	Expected completion FY 2019-20	DPAC (TCCO)	The TCCO continues to support Tasmanian councils to understand and manage climate-related risks likely to affect their operations and service delivery. Following a 2018 analysis of Tasmanian local government's climate change governance, the Climate Resilient Councils project is being extended to support councils to identify council policies, programs, assets and operations that may be affected by a changing climate. This work will support councils to undertake enhanced strategic planning, financial planning and community resilience building.	● ● ● ● IN PROGRESS
5.4 Understand and manage the impacts of coastal hazards to existing settlements by identifying risks and developing management options	Expected completion FY 2018-19	DPAC (TCCO, OSEM) <i>DoJ</i>	The TCCO supports Tasmania's coastal managers to help them identify and manage coastal hazards to existing settlements and values. Four information gathering workshops with coastal managers and relevant staff from State and local governments and government business enterprises were held across the State in late 2018. The findings from the workshops will inform the development of the Tasmanian Government's ongoing approach to managing coastal hazards for existing settlements and values.	● ● ● ● IN PROGRESS

Action	Timeframe	Responsibility	Commentary	Status
5.5 Examine the impacts of climate change on bushfire risks in the Tasmanian Wilderness World Heritage Area	Complete	DPAC (TCCO) DPIPWE DPFEM	<p>Completed in 2017-18.</p> <p>The Tasmanian Government's response to the Tasmanian Wilderness World Heritage Area Bushfire and Climate Change Research Project was publicly released in December 2017.</p> <p>To support the implementation of the report recommendations, the Tasmanian Government allocated additional funding of \$4 million over four years in the 2017-18 Budget for bushfire management in the TWWHA.</p> <p>This funding is supporting the implementation of a number of the Research Project's recommendations. This includes improving bushfire management planning, bushfire risk assessment and modelling, bushfire recovery, developing a model of fire cover, and undertaking planned burning in the TWWHA.</p>	 COMPLETE
5.6 Work with Tasmanian Government agencies to embed climate change consideration in strategic planning, purchasing and decision making	Ongoing	DPAC (TCCO) Treasury	<p>The TCCO is working with Tasmanian Government agencies to identify approaches to embed climate change into government decision making. This was a key recommendation of the independent review of the <i>Climate Change (State Action) Act 2008</i>.</p>	 ONGOING

Action	Timeframe	Responsibility	Commentary	Status
<p>5.7 Mitigate risks from bushfire by delivering a targeted program of burns to reduce fuel in areas that pose the greatest risk to the Tasmanian community</p>	Ongoing	DPIPWE	<p>DPIPWE's Parks and Wildlife Service assesses fire risk using the statewide Bushfire Risk Assessment Model (BRAM). BRAM is used to identify areas of risk and then treat the areas of highest risk to the community through a targeted program of fuel reduction burns. The five-year average of fuel reduction burns on reserved land at June 2018 is 43.6 burns treating an area of 14,172 hectares. This is a large increase on the five-year average reported in 2018 in terms of the number of burns and area burnt (previously 37 burns and 10,038 hectares), as this five year period includes all five years of the Statewide Fuel Reduction program.</p> <p>The BRAM has been upgraded to a more contemporary IT platform and outputs made available to all agencies on the Common Operation Platform. Agency and local government requirements are being developed into a web-based user application to enable user-specific fire risk assessments.</p>	 ONGOING

6

SUPPORTING COMMUNITY ACTION



This priority area aims to support vulnerable Tasmanians adapt to a changing climate, increase community action to reduce emissions and energy use and commits to a long-term target to achieve zero net emissions for Tasmania by 2050.

Action	Timeframe	Responsibility	Commentary	Status
<p>6.1 Legislate for a target of zero net emissions by 2050</p>	Expected completion FY 2018-19	DPAC (TCCO)	<p>The TCCO is leading a project to amend the <i>Climate Change (State Action) Act 2008</i> (the Act), including legislating for a target of zero net emissions for Tasmania by 2050.</p> <p>The TCCO has undertaken broad public consultation of the proposed Act amendments, including releasing a public discussion paper in October 2018, and holding three public consultation forums in October and November 2018. Tasmanian Government agencies were consulted on the proposed Act amendments in late 2018 and early 2019.</p>	<p>● ● ● ● ● ●</p> <p>NEARING COMPLETION</p>
<p>6.2 Deliver a home energy savings program for low income households, provide energy efficiency information, and undertake energy efficiency audits and low cost upgrades</p>	Expected completion FY 2020-21	DPAC (TCCO)	<p>Power\$mart Homes is a new \$850,000 statewide energy efficiency program to help low income Tasmanian households stay warm, save money and reduce greenhouse gas emissions.</p> <p>Under Power\$mart Homes, eligible Tasmanian households will receive home energy efficiency assessments, energy efficiency information, and a range of low cost energy efficiency upgrades. The program will commence towards the end of 2019.</p>	<p>● ● ● ● ●</p> <p>IN PROGRESS</p>

Action	Timeframe	Responsibility	Commentary	Status
6.3 Support the aged care sector to prepare for, and respond to, extreme heat events by developing tailored resources for aged care facilities	Complete	DoH	Completed in 2017-18, with energy efficiency audits of nine aged care facilities and a range of resources for the aged care sector.	●●●●●✓ COMPLETE
6.4 Identify additional policies and programs to build community resilience to population health risks in a changing climate	Ongoing	DoH	The Tasmanian Climate Change and Health Roundtable was held in April 2019. Over 40 international, national and local participants attended, including health clinicians, policymakers and climate change and health researchers. Outcomes of the event are being considered and prioritised.	●●●●●● NEARING COMPLETION
6.5 Deliver an energy efficiency program for community sector professionals to assist clients to reduce their energy use	Complete	DPAC (TCCO)	Completed in 2017-18, with 12 statewide workshops for financial counsellors to better assist vulnerable clients to manage their energy use and power bills.	●●●●●✓ COMPLETE

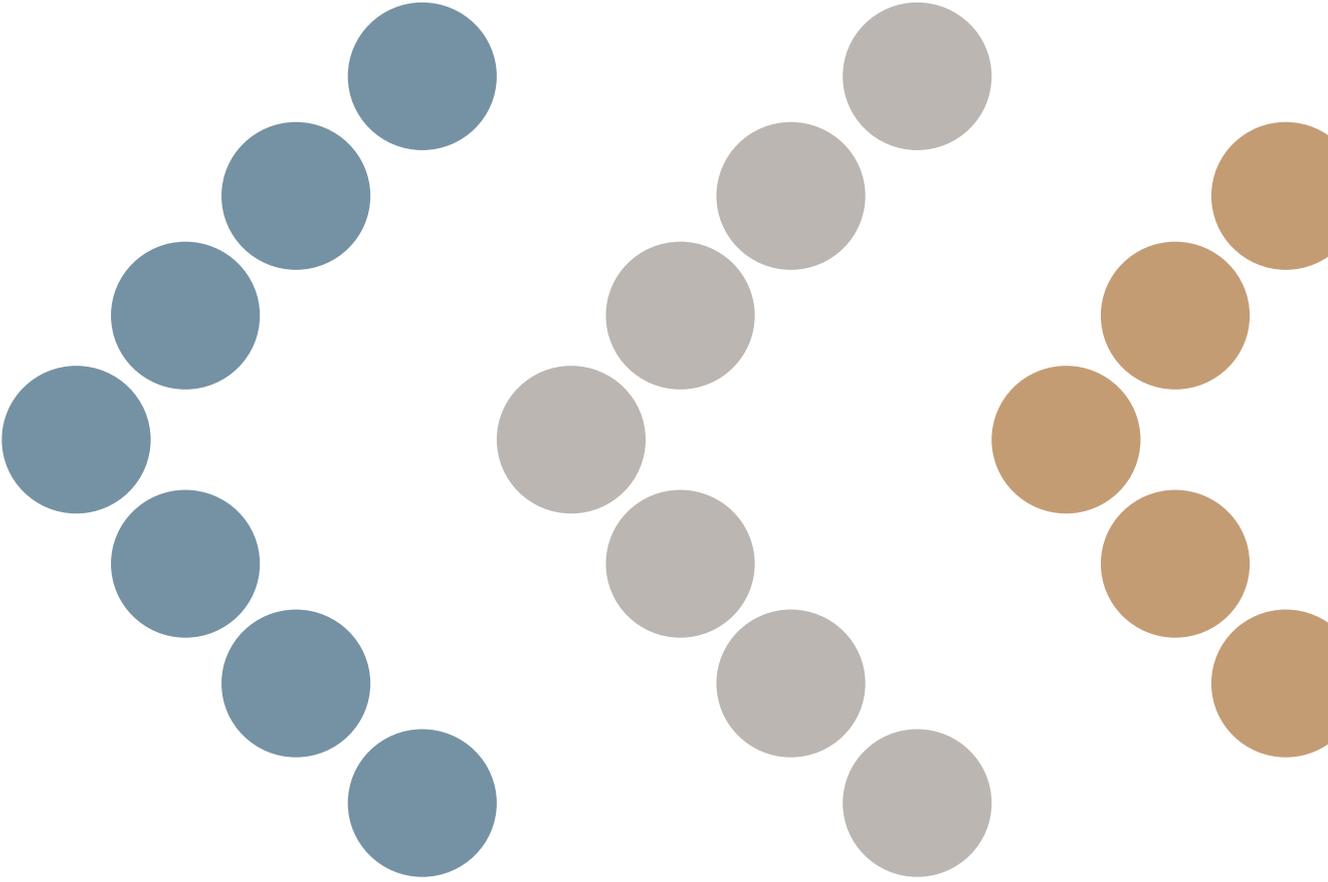
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Public Health Services were very pleased to have the support of the Tasmanian Climate Change Office in organising the Tasmanian Climate Change and Health Roundtable in April. Our attendees were given an overview of the issues, concentrating on the unique Tasmanian perspective. All attendees worked to develop over 120 actions that would reduce emissions and promote health across a number of priority areas. We look forward to continuing our partnership with the Tasmanian Climate Change Office to progress these actions in the health sector.

DR SIOBHAN HARPUR
CEO Public Health Services,
Department of Health

LIST OF ACRONYMS AND ABBREVIATIONS

AC	_____	Alternating Current
APRA	_____	Australian Prudential Regulation Authority
BRAM	_____	Bushfire Risk Assessment Model
Climate Action 21	_____	<i>Climate Action 21: Tasmania's Climate Change Action Plan 2017–2021</i>
CO₂-e	_____	carbon dioxide equivalent
COP24	_____	24th Conference of the Parties
Coordinator-General	_____	Office of the Coordinator-General
DC	_____	Direct Current
DoE	_____	Department of Education
DoH	_____	Department of Health
DoJ	_____	Department of Justice
DPAC	_____	Department of Premier and Cabinet
DPFEM	_____	Department of Police, Fire and Emergency Management
DPIPWE	_____	Department of Primary Industries, Parks, Water and Environment
FY	_____	Financial Year
IPCC	_____	Intergovernmental Panel on Climate Change
LULUCF	_____	land use, land use change and forestry
MDBA	_____	Murray-Darling Basin Authority
Mt	_____	megatonnes
OSEM	_____	Office of Security and Emergency Management
Paris Agreement	_____	21st Conference of the Parties in Paris in December 2015
SES	_____	State Emergency Service
State Growth	_____	Department of State Growth
Tasmanian Irrigation	_____	Tasmanian Irrigation Pty Ltd
TCCO	_____	Tasmanian Climate Change Office
Treasury	_____	Department of Treasury and Finance
TWWHA	_____	Tasmanian Wilderness World Heritage Area
UNFCCC	_____	United Nations Framework Convention on Climate Change





Tasmanian Climate Change Office
Department of Premier and Cabinet
GPO Box 123, HOBART TAS 7001
Phone: 03 6232 7173
Email: climatechange@dpac.tas.gov.au
Visit: www.climatechange.tas.gov.au