

Tasmanian climate scenarios for sustainability reporting

Prepared by the **Tasmanian Policy Exchange**
at the **University of Tasmania**

February 2026

Acknowledgement of country

We acknowledge the palawa/pakana of Lutruwita, the traditional owners of the land upon which we live and work. We pay respects to Elders past and present as the knowledge holders and sharers. We honour their strong culture and knowledges as vital to the self-determination, wellbeing and resilience of their communities. We stand for a future that profoundly respects and acknowledges Aboriginal perspectives, culture, language and history.

The University of Tasmania is a leader in climate action

The University of Tasmania is committed to promoting ambitious, evidence-based climate action and has been recognised as the number one university globally for Climate Action in the Times Higher Education Impact Ratings for four years running (2021 to 2025). The University has also been carbon neutral certified since 2016 by the Australian Government Climate Active Standard.

Acknowledgements

The TPE would like to thank Professor Kathleen Beyer for presenting to GRE staff on the latest Tasmanian climate modelling. We would also like to thank all the workshop participants for generously sharing their time and insights.

Funders

The preparation of this report was made possible through the commissioning and financial support of the following organisations:

Aurora Energy	Tasmanian Ports Corporation
Hydro Tasmania	Tasmanian Railway
Sustainable Timber Tasmania	TasWater
Tasmanian Networks	

Authors

Robert Hortle	Kimberly Brockman
Frieda Moran	Lachlan Johnson
Logan Linkston	Sarah Hyslop



About the Tasmanian Policy Exchange

The Tasmanian Policy Exchange (TPE) was established in 2020 to enhance the University's capacity to work with government, industry and community partners to make timely and informed contributions to policy issues and debates shaping Tasmania's future.

It also works with staff from across the University of Tasmania to develop evidence-based policy options and longer-term collaborations. The TPE's recent policy analysis includes:

- [Independent Review of the Tasmanian Climate Change Review Act 2008](#) (September 2025)
- [Tasmania's Clean Fuel Future – TPE Submission](#) (July 2025)
- [Tasmanian Greenhouse Gas Emissions Update: Annual progress report for the 2023 reporting year](#) (July 2025)

See more at www.utas.edu.au/tpe

Policy In My Backyard

The TPE has recently launched Policy In My Backyard ('PIMBY'). PIMBY is where we take a closer look at the policies that shape life in Tasmania – from elections to environment, healthcare to housing. Each edition unpacks complex issues with clarity, curiosity, and a deep interest in how policy plays out on the ground.

You can read all our editions at www.policyinmybackyard.org

Contents

Executive summary	9
Part 1: Introduction	29
Part 2: Full scenarios	39
Scenario 1: Resilient future	41
2030	43
2050	51
2090	59
Scenario 2: Missed opportunities	67
2030	69
2050	77
2090	85
Scenario 3: Adapting together	93
2030	95
2050	103
2090	111
Scenario 4: Runaway Crisis	119
2030	121
2050	129
2090	137
Appendix	145
Endnotes	145

Acronyms

AASB	Australian Accounting Standards Board
ACCU	Australian Carbon Credit Unit
ACTS	Australasian Campuses Towards Sustainability
AEMO	Australian Energy Market Operator
ASRS	Australian Sustainability Reporting Standards
CBD	Central business district
COP	Council of Parties
ERRP	Emissions Reduction and Resilience Plan
GDP	Gross domestic product
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
LCLF	Low-carbon liquid fuel
NCRA	National Climate Risk Assessment
NEM	National Electricity Market
NGER	National Greenhouse and Energy Reporting
NRMS	Nature Repair Market Scheme
SSP	Shared Socioeconomic Pathways
TCRA	Tasmanian Climate Risk Assessment
TPE	Tasmanian Policy Exchange
TRET	Tasmanian Renewable Energy Target

Executive summary

This report provides four climate scenarios to support Tasmanian Government-Related Entities (GREs) in meeting their climate-related disclosure obligations under the new Australian Accounting Board Standard 2 (AASB S2). The scenarios were developed by the Tasmanian Policy Exchange (TPE) in collaboration with GRE representatives. They draw on the IPCC’s Sixth Assessment Report (AR6), the Australian Government’s National Climate Risk Assessment (NCRA), the Tasmanian Government’s Tasmanian Climate Risk Assessment (TCRA), as well as other scientific and government publications.

The changing climate

The climate crisis is a global phenomenon driven by human activity.¹ According to the IPCC, mean global surface temperature levels in the period between 2011-2020 were 1.1°C above 1850-1900 levels.² The negative impacts of this warming – from sea-level rise to increasing frequency and severity of extreme weather events – are already being felt across the world.³

Australia is already facing the escalating impacts of the climate crisis, and these challenges are expected to intensify.⁴ In Tasmania, bushfires, extreme heat events, and floods are becoming more frequent

and severe; sea levels continue to rise; and biodiversity is declining – among numerous other pressing issues.⁵ Every increment of future warming will only worsen these impacts.⁶

The scenarios

This report develops and applies four scenarios, constructed using two axes (see Figure A). The horizontal axis variable is ‘Mean global temperature increase’, and it runs from a 1.5°C increase by 2100* at the low end, to a 3.6°C increase at the high end. These temperature increases are aligned with AASB S2 requirements and the IPCC’s Shared Socioeconomic Pathways (SSP) (see Table A).⁷

The vertical axis variable is ‘Government Response’, covering both the Australian and Tasmanian Governments. This axis runs from ‘reactive’ to ‘proactive’. At the reactive pole, governments are focused on the short term and respond to the climate crisis as impacts unfold. At the proactive pole, governments take a long-term view, planning ahead to reduce emissions and prepare for climate impacts. The vertical axis is aligned with several existing climate scenarios, including those developed by the International Energy Agency (IEA) and the Australian Energy Market Operator (AEMO).

* Compared to 1850-1900 levels.

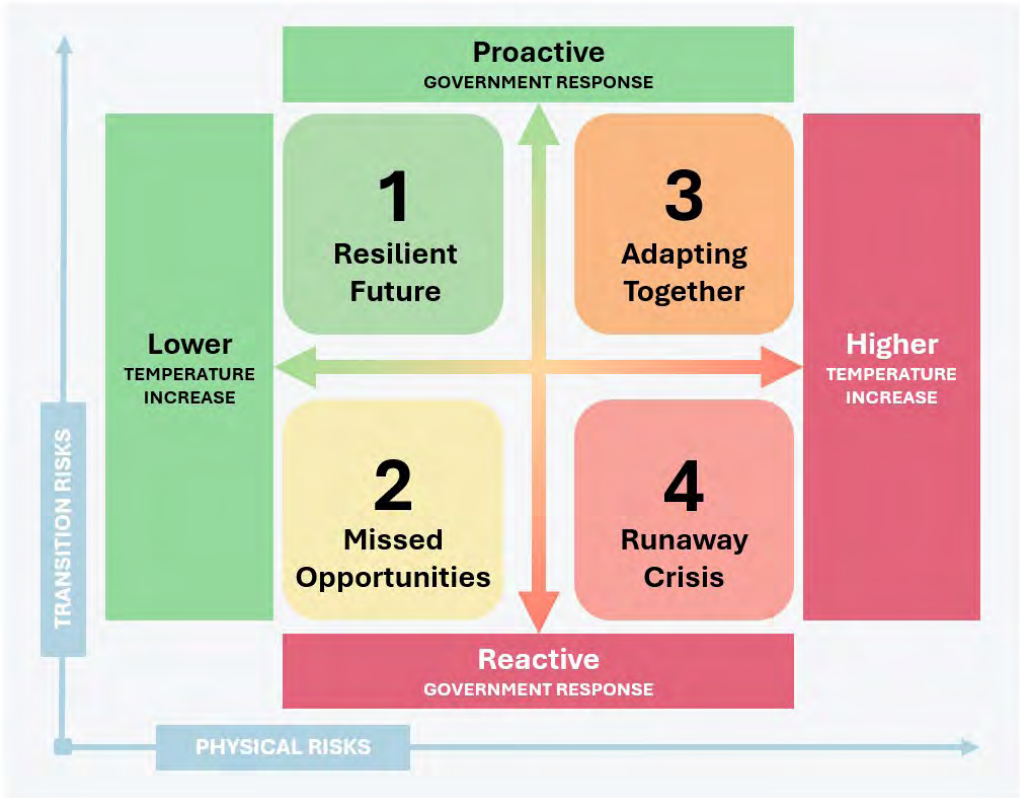


Figure A: The four scenarios and their axes

- Combining the two axes produces four scenarios:
- **1 – Resilient Future:** lower temperature increase and proactive government response.
 - **2 – Missed Opportunities:** lower temperature increase and reactive government response.
 - **3 – Adapting Together:** higher temperature increase and proactive government response.
 - **4 – Runaway Crisis:** higher temperature increase and reactive government response.

Scenario	Scenario temperature ⁸			SSP alignment
	2030	2050	2090	
1 – Resilient Future	1.5°C	1.5°C	1.5°C	SSP1-2.6
2 – Missed Opportunities				
3 – Adapting Together	1.5°C	2.1°C	3.6°C	SSP3-7.0
4 – Runaway Crisis				

Table A: The temperatures and SSP alignment of the four scenarios

Transition risks and physical risks have been included as secondary axes. Transition risks refer to the impacts and costs of moving to lower-carbon economy and society, while physical risks refer to the changes in weather and the environment due to global heating.⁹

AASB S2 requires reporting entities to include short-, medium-, and long-term timeframes in their climate scenario analysis. To align with relevant Tasmanian and Australian Government plans and policies, the scenarios use 2030, 2050, and 2090. These years also represent a mid-point in the 20-year periods used by the IPCC SSPs.

Each scenario/time period combination features a narrative description of potential major political, economic, social, technological, environmental, and legal trends at the global, Australian, and Tasmanian levels. Global narratives are based on the IPCC SSPs; Australian and Tasmanian narratives are based on the *National Climate Risk Assessment*, the *Tasmanian Climate Risk Assessment*, and a range of other datasets and reports.

The narratives are accompanied by a description of specific impacts relevant to Tasmanian GREs (see Table A). These are divided into six ‘impact dimensions’ based the ‘Six Capitals Framework’, an internationally recognised sustainability accounting mechanism. The impact dimensions

Table A: Impact dimensions based on the Six Capitals Framework

Dimension	Definition	Examples of potential climate impacts
Financial	The pool of funds available to an organisation for use in the production of goods or the provision of services. These funds may be from a range of sources, such as the sale of goods and services, investment financing, or government grants.	• Increased costs (e.g. retrofitting infrastructure for climate resilience, repairs following extreme weather events, rising insurance premiums, decarbonisation) • Revenue variability due to changes in customer base or pricing regulator outcomes • Opportunities for new renewable energy revenue streams • New government funding opportunities to incentivise investment in resilience and adaptation

Dimension	Definition	Examples of potential climate impacts
Intellectual	An organisation's knowledge-based intangible assets. Includes systems, processes and protocols; patents and intellectual property; and tacit organisational knowledge.	• The need to revise systems and processes to manage climate impacts • Opportunities for development of IP related to managing climate impacts
Manufactured	The physical assets an organisation uses in the production of goods or the provision of services. Includes infrastructure (e.g. roads, ports, rail, bridges), buildings, machinery, and IT equipment.	• Supply chain disruption • Extreme weather events destroy infrastructure • Service disruptions due to damaged infrastructure • Opportunities to develop more climate-resilient infrastructure
Social and Relationship	The quality of the relationships an organisation has with its stakeholders (which can include customers, partner organisations, contractors, funders, shareholders, regulators, etc.). Also includes reputation, community engagement and social licence to operate.	• Reduced customer trust due to service disruption, rising costs • Resource scarcity and competition lead to increasingly adversarial relationships among GREs • Impacts on stakeholder trust
Human	The capabilities, experience, and expertise of the people within an organisation, as well as their mental and physical wellbeing. Also includes the quality of leadership and management and the workforce's alignment with the organisation's goals and values.	• Extreme weather causes health and safety issues • Reduced international travel may make it harder to import skilled workers • Employees need to learn new climate adaptation skills
Natural	The renewable and non-renewable environmental resources that an organisation depends on and impacts. These can include air, water, land, forests, biodiversity, minerals, and animals. Also covers an organisation's environmental sustainability.	• Destruction of natural environment by extreme weather events • Reduced access to natural capital assets such as water and arable land • Increased food insecurity

are tailored to GREs, but they may have broader relevance for other Tasmanian organisations.

For each scenario / time horizon combination, impact dimensions are assigned a trend symbol to provide a simple visual indicator of overall impact across GREs. It is important to note that in reality, impacts will vary among GREs depending on their unique circumstances.

Using the scenarios

The scenarios are qualitative descriptions of possible futures designed to equip users with an understanding of the potential impacts of climate change. They were developed to be broad enough to apply to all Tasmania GREs, meaning that individual GREs will need to conduct their own analysis processes to understand how each scenario could impact them.

There are two main recommended methods for using the scenarios: first, the scenarios can be used as the basis for an organisational risk assessment; and second, an existing risk assessment could be mapped onto the scenarios. There are benefits and challenges associated with both use cases, and the most appropriate approach will depend on organisational context.

Regardless of the approach taken, the Australian Government’s Draft National Climate Scenario Guidance recommends considering the following principles when conducting climate scenario analysis:¹⁰

- **Prudent risk management:** It is important to take ‘worst case’ scenarios seriously due to their potential to disrupt or even break systems. These extreme scenarios can help provide insights into vulnerabilities and areas for action.

- **Compounding, cascading and systemic hazards:** Climate hazards often compound and amplify one another, creating rapid swings between extremes and/or ‘tipping points’. It is important to consider these cascading impacts across interconnected systems.
- **Acute and chronic hazards:** Organisational planning should differentiate between acute hazards (the immediate impacts of more frequent and severe extreme weather events) and chronic hazards (which occur over the longer term and may go unnoticed until they reach a critical level). However, the line between the two can often be blurred.

- **Longer-term changes:** Due to historic emissions and the length of time that environmental processes take to unfold, some changes that are already ‘locked in’ may take centuries to occur – even if global net-zero was achieved.
- Importantly, the scenarios are not intended to be exhaustive or predictive. They are a tool to help GREs understand potential climate-related risks and opportunities, strengthen strategic planning, and support compliance with AASB S2. They are designed as a shared resource to support consistent climate risk assessment and reporting across Tasmania’s GREs.

Figure C: Trend symbols to indicate overall impact across dimensions



Scenario 1 overview: Resilient Future

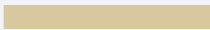
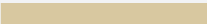
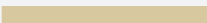
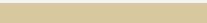
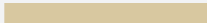
Strong international action limits warming to around 1.5°C, yet extreme weather, biodiversity loss, and infrastructure challenges reshape the world. The global economy shifts to clean energy dominance, driven by carbon pricing, electrification, and advanced technologies. These changes create growth opportunities, but the rapid pace of change comes with high costs. Despite adaptation efforts, climate-related health risks and displacement remain widespread.

Australia establishes itself as a climate leader, reaching net zero by 2050 and embedding emissions reduction across all sectors. Strategic investments in resilience, circular economy practices, and domestic production help maintain stability, but the country still contends with particularly hot inland regions, more frequent and severe extreme weather events, and insurance affordability issues. Adaptation remains a national priority as communities relocate from high-risk areas and governments

manage escalating disaster costs.

Tasmania stands out as a climate refuge due to its relatively benign climate and early, ambitious action. The State exceeds renewable energy targets, becomes a major exporter of clean power, and develops green hydrogen and low-carbon fuels, driving economic growth and attracting investment. However, Tasmania faces longer heatwaves, increased fire risk, shifting rainfall patterns, and ecosystem degradation, including the loss of iconic species. Adaptation measures (such as managed retreat, infrastructure upgrades, and regenerative agriculture) mitigate the worst impacts, while proactive planning secures water and energy resilience. Social cohesion remains strong, supported by effective government leadership, even as environmental pressures persist.

More detailed analysis of scenario 1 and its implications for the six capitals is provided in Part 2.

Capitals	2030	2050	2090
Financial			
Intellectual			
Manufactured			
Social and Relationship			
Human			
Natural			

Scenario 2 overview: Missed Opportunities

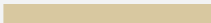
Strong international action limits warming to around 1.5°C, yet extreme weather, biodiversity loss, and infrastructure challenges reshape the world. The global economy shifts to clean energy dominance, driven by carbon pricing, electrification, and advanced technologies. These changes create growth opportunities, but the rapid pace of change comes with high costs. Despite adaptation efforts, climate-related health risks and displacement remain widespread.

Climate impacts in Australia are being felt more keenly than in other parts of the world due to the reactive, short-term approach taken by successive national governments. Poor infrastructure planning and a lack of resilience and adaptation measures mean that the effects of more frequent and severe droughts, bushfires, and floods are worse than they could have been. Insurance is unaffordable in high-risk areas, water scarcity becomes a major challenge, supply chains falter, and political polarisation deepens amid ongoing,

divisive debate about climate action. Many businesses and skilled workers relocate overseas.

Tasmania fares better than the mainland thanks to its more benign climate, but still faces deep challenges. Heatwaves lengthen, increasing mortality among vulnerable populations. Fiscal constraints and waning political will undermine emissions reduction and adaptation planning. The State loses its net-zero status, damaging its ‘clean, green’ reputation and deterring investment. Renewable energy development stalls due to regulatory barriers and community opposition, and electricity costs rise steeply. Population decline begins as climate-conscious residents and businesses leave, even as some migrants arrive from hotter regions of Australia. Social cohesion frays under mounting economic and environmental stress.

More detailed analysis of scenario 2 and its implications for the six capitals is provided in Part 2.

Capitals	2030	2050	2090
Financial			
Intellectual			
Manufactured			
Social and Relationship			
Human			
Natural			

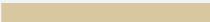
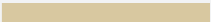
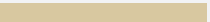
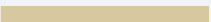
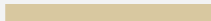
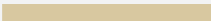
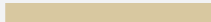
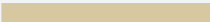
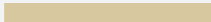
Scenario 3 overview: Adapting Together

A lack of coordinated and effective international action sees the global mean temperature reach 3.6°C above pre-industrial levels by 2100. This reshapes ecosystems, economies, and societies, with biodiversity declining sharply and food and water insecurity becoming widespread. Malnutrition, heat stress, and disease burden public health systems. Global cooperation has fractured as countries prioritise self-reliance over collaboration. Resource conflicts escalate and extreme weather events intensify, killing and displacing millions of people.

Australia positions itself as a climate leader early in the century, legislating against fossil fuels and achieving net zero by 2050. Yet the mainland faces worsening droughts, bushfires, and floods. While governments invest heavily in resilience and disaster planning, adaptation has its limits in a rapidly warming world. Social tensions increase as resource scarcity deepens.

Tasmania experiences less severe impacts than the mainland but is far from immune. Heatwaves lengthen and rainfall patterns shift dramatically. Despite fiscal challenges, strong climate leadership and renewable energy investment bolster the State’s reputation and attract capital. Tasmania benefits from clean power exports and develops new green industries that create jobs and support industrial decarbonisation. Adaptation measures – such as managed retreat, infrastructure upgrades, and advanced building standards – are widely implemented. While ecosystems degrade and iconic species vanish, proactive restoration and strategic planning mitigate the worst effects. Social cohesion remains relatively strong, as Tasmanians navigate mounting environmental and economic pressures together.

More detailed analysis of scenario 3 and its implications for the six capitals is provided in Part 2.

Capitals	2030	2050	2090
Financial			
Intellectual			
Manufactured			
Social and Relationship			
Human			
Natural			

Scenario 4 overview: Runaway Crisis

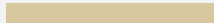
A lack of coordinated and effective international action sees the global mean temperature reach 3.6°C above pre-industrial levels by 2100. This reshapes ecosystems, economies, and societies, with biodiversity declining sharply and food and water insecurity becoming widespread. Malnutrition, heat stress, and disease burden public health systems. Global cooperation has fractured as countries prioritise self-reliance over collaboration. Resource conflicts escalate and extreme weather events intensify, killing and displacing millions of people.

Australia’s environment, economy, and society are devastated by the climate crisis. The reactive, short-term approach taken by successive national governments means that life becomes very hard for most Australians. Many ecosystems collapse and the economy crashes as extreme weather events

rage unchecked. Social cohesion frays as communities are left to fend for themselves and resource scarcity prevails.

Tasmania faces mounting challenges despite being less exposed than the mainland. Heatwaves grow longer, increasing mortality rates among vulnerable populations. The State loses its net-zero status, and renewable energy development stalls. Fiscal constraints and waning political action undermine adaptation and resilience planning, with little support for communities forced to relocate due to extreme weather events. Habitat loss accelerates and iconic species become extinct, while the population declines and communities fracture as inequality grows sharply.

More detailed analysis of scenario 4 and its implications for the six capitals is provided in Part 2.

Capitals	2030	2050	2090
Financial			
Intellectual			
Manufactured			
Social and Relationship			
Human			
Natural			

1 Introduction

Climate scenario analysis is a tool for exploring how climate change and evolving policies and technologies could potentially impact businesses, communities, investments, and other systems or entities.
(Department of Climate Change, Energy, the Environment and Water, 2025)

Under the new Australian Accounting Standards Board Standard 2 (AASB S2), various entities – including listed companies, private firms, and government businesses – are required to assess their climate resilience using ‘climate scenarios analysis’. Some Tasmanian Government-Related Entities (GREs) will have to comply from 2026. Others will be affected by this requirement in subsequent years, while some may choose to undertake voluntary reporting.

This document presents four climate scenarios designed to support Tasmanian GREs in meeting AASB S2 requirements. The scenarios serve as a shared resource, enabling a consistent approach to climate scenario analysis and risk mitigation across Tasmania’s GREs. This collaborative approach builds on successful shared scenario frameworks developed for the New Zealand tertiary education and local government sectors, and the Australian tertiary education sector.¹¹

1.1 Context

Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming...
(IPCC, 2023)

The changing climate

The climate crisis is a global phenomenon driven by human activity.¹² According to the Intergovernmental Panel on Climate Change (IPCC), mean global surface temperature levels in the period between 2011-2020 were 1.1°C above 1850-1900 levels.¹³ The impacts of this warming are already being felt across the world. For example:

- 2024 was the hottest year on record¹⁴.
- Rainfall patterns and volumes are changing rapidly¹⁵
- Extreme weather events are increasing in frequency and severity¹⁶
- Ocean temperatures are consistently reaching record highs¹⁷
- Sea-levels are rising¹⁸
- Antarctic sea-ice levels are rapidly decreasing¹⁹

Every increment of global warming will intensify these impacts.²⁰

Australia is already experiencing many of the negative impacts

associated with the climate crisis, and the situation is expected to worsen. The National Climate Risk Assessment (NCRA) describes how Australia will continue to experience rising sea levels, more severe coastal erosion and landslips, and an increase in the frequency and intensity of extreme weather events (including heatwaves, bushfires, floods, and droughts).²¹ These physical risks are likely to result in increased inequality, greater incidence of physical and mental health challenges, population displacement, breakdowns in social cohesion, and rising costs for governments and businesses.

Tasmania is not immune to the climate emergency. In 2024, the State recorded higher-than-usual annual minimum and maximum temperatures, continuing a long-term trend of warming consistent with global changes. The Tasmanian Climate Risk Assessment (TCRA) explains that Tasmania is at risk of many of the physical impacts described above, including more frequent and severe bushfires, extreme heat events, and floods; declining rainfall; sea level rise

Government Business Enterprises	State-owned companies	Other
Sustainable Timber Tasmania	Aurora Energy Pty Ltd	TasWater
Hydro Tasmania	Metro Tasmania Pty Ltd	
Motor Accidents Insurance Board	Tasmanian Irrigation Pty Ltd	
Port Arthur Historic Site Management Authority	Tasmanian Networks Pty Ltd	
Tasmanian Public Finance Corporation	Tasmanian Ports Corporation Pty Ltd	
The Public Trustee	Tasmanian Railway Pty Ltd	
	Tasracing Pty Ltd	
	TT-Line Company Pty Ltd	

Table 1: Tasmania's GREs

and increased coastal erosion; and warming coastal waters. These hazards will increasingly cause disruption, environmental degradation, injury, loss of life, billions of dollars in property damage, and lost economic productivity.²²

Tasmanian Government-Related Entities

Tasmania has 15 GREs, comprising six Government Business Enterprises, eight State-owned Companies, and one entity jointly owned by the Tasmanian Government and the State’s local councils (see Table 1). These organisations provide many of the services Tasmanians rely on every day.

All GREs are affected by changes in Tasmania’s climate and environment to some degree. Rising temperatures, shifting rainfall patterns, bushfire threats, and coastal erosion pose significant challenges. Tourism-focused GREs are vulnerable to biodiversity loss and damage to iconic landscapes, while infrastructure-heavy GREs must plan for increased maintenance costs and resilience investments to cope with extreme weather and sea-level rise. In many cases, changes that impact one GRE will have important flow-on effects for others. Therefore, it is vital that GREs engage in coordinated strategic planning to mitigate the risks and seize the opportunities arising from climate change.

Sustainability reporting requirements

The Australian Government formally mandated the Australian Sustainability Reporting Standards (ASRS) through the *Treasury Laws Amendment (Financial Market Infrastructure and Other Measures) Act 2024*. This was aligned with the Government’s Sustainable Finance Strategy. The

ASRS package – issued by the AASB in September 2024 – includes:

- AASB S1 – Voluntary disclosures, covering general sustainability-related financial information.
- AASB S2 – Mandatory climate-related financial disclosures for in-scope entities as defined by the Corporations Act 2001 (Cth).

The standards aim to help businesses

Group	Criteria	Mandatory climate scenario analysis begins
Group 1	Meets ≥ 2 of: • 500+ employees • ≥ A\$1b assets • ≥ A\$500m revenue • large NGER reporter	Financial years beginning on or after 1 July 2026
Group 2	Meets ≥ 2 of: • 250+ employees • ≥ A\$500m assets • ≥ A\$200m revenue • includes other NGER reporters and large asset owners	Financial years beginning on or after 1 July 2027
Group 3	Entities preparing Chapter 2M financial reports not captured in Groups 1 or 2 but exceeding thresholds	Financial years beginning on or after 1 July 2028
Note: Entities not required to report are able to report voluntarily		

Table 2: Phased enforcement of AASB S2

and other entities better plan for and consider climate risks and sustainability challenges. The ASRS have been designed to align with national frameworks and reporting standards, providing consistency for Australian businesses.²³ This is particularly important for supporting investor confidence in the context of global markets. The ASRS came into force on 1 January 2025. Under AASB S2, specified entities (see Table 2) are required to assess their climate resilience using 'climate scenarios' in their annual reporting. An entity's climate scenario analysis is subject to 'limited assurance' for the first two years of reporting, and 'reasonable assurance' for subsequent years.⁺ Some Tasmanian GREs are in Group 1, while others are in Groups 2 and 3.

In the context of the ASRS, climate scenarios must be plausible, evidence-based descriptions of potential futures constructed using carefully defined parameters (see Section 1.2). Entities must use at least two scenarios: a low-warming scenario consistent with

global warming of 1.5°C above pre-industrial levels; and a high-warming scenario, where global warming well exceeds 2°C.* Each scenario needs to span three timeframes – short, medium, and long term – with definitions of these determined by the entity's context.[#]

The analysis conducted using these scenarios must fulfil several requirements.²⁴ Entities are required to use the scenarios to analyse their entire operations, assets, investments, and value chain, as well as the implications for their strategy, business model, and ability to respond. Analysis may be limited to "all reasonable and supportable information that is available to the entity at the reporting date without undue cost or effort".²⁵ The analysis may involve qualitative and quantitative assessment of financial effects arising from climate-related risks and opportunities. Where quantification is not possible, not useful due to high uncertainty, or beyond current capabilities, qualitative assessment is acceptable.

1.2 Methodology

There is no single pathway to a particular scenario outcome. Different combinations of driving forces and assumptions will result in different plausible development pathways, even to the same temperature or emissions outcome (Task Force on Climate-related Financial Disclosure, 2020, 'Guidance on Scenario Analysis for Non-Financial Companies')

This section provides detail on the technical parameters used to develop the four scenarios. These parameters were developed in collaboration with GRE representatives and Tasmanian Government stakeholders across two workshops in late 2025 (see Appendix for more detail on the project process).

Axes

Climate scenarios are a relatively new tool, which means there is no single 'best-practice' standard for developing them. Based on a review

of scenarios developed by a range of international organisations (such as the Task Force on Climate-Related Financial Disclosure²⁶ and Australasian Campuses Towards Sustainability²⁷), the University team adopted a deductive 'two-by-two' approach to developing the scenarios.²⁸ This involves identifying two key variables – which are ideally both 'high impact' and 'high uncertainty' – and using them as the axes for a two-by-two grid, producing four scenarios (see Figure 1). For each scenario, deductive thinking

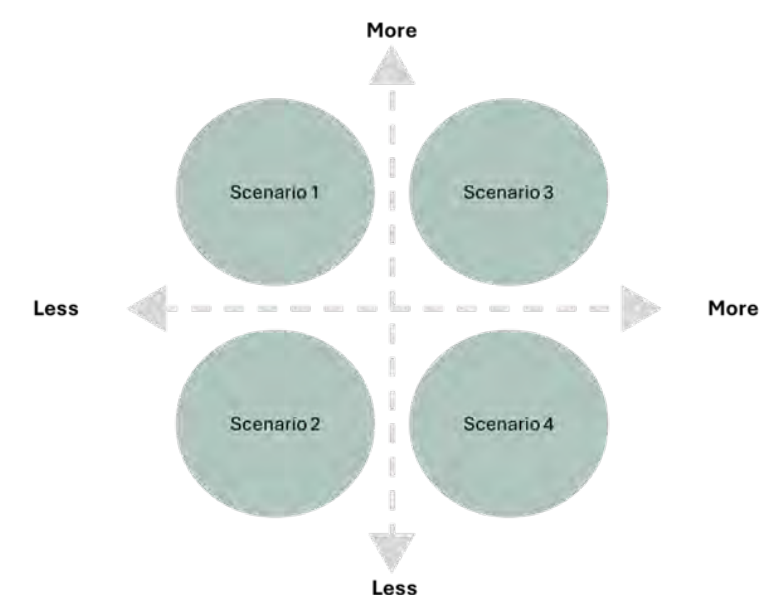


Figure 1: Two-by-two grid approach to scenario development

+ Detail on assurance standards is provided in the *Standard on Sustainability Assurance ASSA 5000* available at <https://auasb.gov.au/media/zjwnghou/assa5000.pdf>

* See s 3(i)-(ii) of the Climate Change Act 2022 (Cth).

See AASB S2 paragraph 10(c)

is then used to explore what other relevant trends and drivers might be at play within the parameters defined by the axes.

‘Mean global temperature increase’ was selected as the horizontal axis variable to fulfil the AASB S2 requirement of considering at least one low temperature scenario and one high temperature scenario.* This axis ranges from an mean global temperature increase of 1.5°C by 2100 at the low end, to a 3.6°C increase at the high end – noting that the temperature increase in Tasmania is likely to be below the global mean.²⁹ All temperatures are relative to the pre-industrial baseline used by the IPCC. It is assumed that global action (or inaction) on emissions reduction will be the main driver of temperature change.³⁰

‘Government response’ was chosen as the vertical axis variable. This is aligned with several existing climate scenarios, including those developed by Australasian Campuses Towards Sustainability (ACTS), the Australian Energy Market Operator (AEMO), and the International Energy Agency (IEA). The axis runs from ‘reactive’ to ‘proactive’, with ‘government’ referring to both the Tasmanian and Australian Governments. At the reactive pole, government is focused on the short term and responding to the climate crisis as impacts emerge rather than planning in advance. At the proactive pole, government takes a long-term view focused on emissions reduction and climate resilience. Examples of activities that a proactive government might undertake are shown in Figure 2.

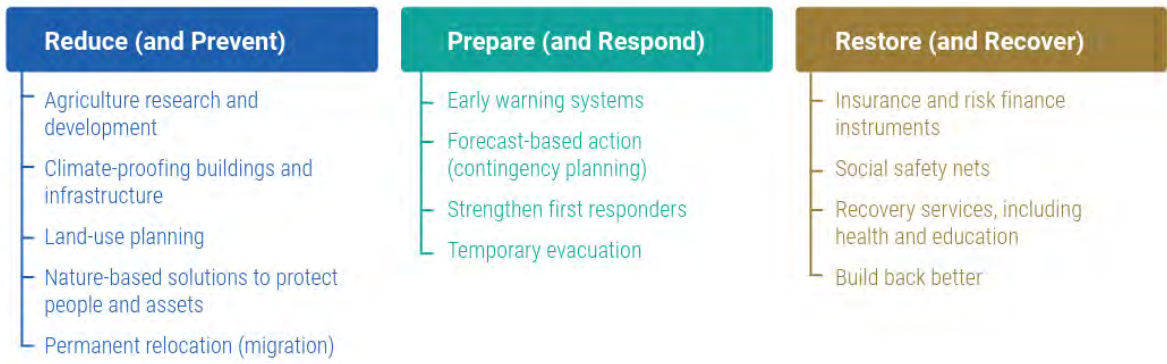


Figure 2: Basic elements of climate change adaptation (Image source: Global Commission on Adaptation, 2019, *Adapt Now: A Global Call for Leadership on Climate Resilience*)

* AASB S2 requires temperature increases to align with those set out within the Climate Change Act 2022 (Cth) – see the Sustainability reporting Regulatory Guide, RG 280.99 <https://download.asic.gov.au/media/j4rhwyiz/rg280-published-31-march-2025.pdf> and Australian Sustainability Reporting Standard Climate-related Disclosures, AASB S1, BC61 https://standards.aasb.gov.au/sites/default/files/2025-01/AASBS2_09-24.pdf

‘Transition risks’ and ‘Physical risks’ have been included as secondary axes. Transition risks are those which arise from implementing the extensive policy, legal, technological, and market changes required to mitigate and adapt to the impacts of climate change.³¹ It is assumed that a faster, more ambitious government response to the climate emergency is associated with higher transition costs – however, these are very challenging to quantify.³² Physical risks encompass changes in weather and the environment as a result of global heating, including increased frequency and intensity of extreme weather events and longer-term shifts in climate patterns such as sustained higher temperatures.³³ Physical risks are assumed to increase as the global mean temperature rises.

The four scenarios arising from the two-by-two grid are (see Figure 3):

- **1 – Resilient Future:** lower temperature increase and proactive government response.
- **2 – Missed Opportunities:** lower temperature increase and reactive government response.
- **3 – Adapting Together:** higher temperature increase and proactive government response.
- **4 – Runaway Crisis:** higher temperature increase and reactive government response.

Transition risks are assumed to be highest in the Resilient Future and Adapting Together scenarios, while physical risks are assumed to be highest in Adapting Together and Runaway Crisis.

It is important to note that these scenarios represent just a handful of possible outcomes out of an almost infinite number. They are archetypes designed to represent a set of four diverse potential futures, rather ways of describing every possible way that the two main variables could combine.

Timeframes

Under AASB S2, entities are required to include short-, medium-, and long-term timeframes in their climate scenario analysis. In collaboration with the GREs, the University team determined that the three most appropriate time horizons for the Tasmanian context are 2030, 2050, and 2090. These are aligned with the TCRA and the Australian Government’s Draft National Climate Scenario Guidance. They also represent the mid-point in the 20-year periods used to structure the IPCC’s Shared Socioeconomic Pathways (SSPs).

Narratives

Within the scenarios, each time horizon features a narrative description of global, Australian, and Tasmanian conditions. The ‘PESTEL’ (political, economic, social, technological,



Figure 3: The four scenarios and their axes

environmental, and legal) framework was used to identify key factors for inclusion in each narrative.

The global narratives are based on the IPCC's SSPs (see Table 3). The five SSPs were iteratively developed over several years by an international team of climate scientists, economists, and systems modellers. They span a wide range of futures broadly representative of current scientific consensus, which makes them a useful toolkit for the

climate change research community to carry out integrated, multi-disciplinary analysis.³⁴

Each SSP explores how different socioeconomic developments might influence greenhouse gas emissions, climate change impacts, and mitigation/adaptation strategies.

The two lower temperature scenarios in this report (Resilient Future and Missed Opportunities) are based on SSP1-2.6 ('Sustainability'). SSP1-2.6 is

aligned with AASB S2 requirements because its 'very likely' temperature range includes 1.5°C. The two higher temperature scenarios in this report (Adapting Together and Runaway Crisis) are based on SSP3-7.0 ('Regional Rivalries'), which estimates a 3.6°C increase in the global mean temperature by 2100. This is aligned with the AASB S2 requirement to include a scenario where the temperature increase 'well exceeds 2°C'. To maintain consistency and provide a rationale behind the

temperature changes, the two lower temperature scenarios feature the same global narrative, as do the two higher temperature scenarios.

The Australian and Tasmanian narratives – including any quantitative data – for each scenario are based on the relevant elements of the NCRA and TCRA respectively. The initial narrative drafts were refined in collaboration with GRE representatives over two workshops and via feedback to ensure relevance to their context.

Scenario	Selected temperature (and very likely range according to IPCC projections ³⁵)*			SSP alignment
	2030	2050	2090	
1 – Resilient Future	1.5°C	1.5°C	1.5°C	SSP1-2.6
2 – Missed Opportunities	(1.2-1.7°C)	(1.3-2.2°C)	(1.3-2.4°C)	
3 – Adapting Together	1.5°C	2.1°C	3.6°C	SSP3-7.0
4 – Runaway Crisis	(1.2-1.8°C)	(1.7-2.6°C)	(2.8-4.6°C)	

* While the temperatures for scenarios 3 and 4 are the 'best estimates' used in the SSPs, scenarios 1 and 2 use 1.5°C across all time horizons as required by AASB S2.

Table 3: Assumed temperature increase used in scenarios

Impact dimensions

Climate scenarios often include analysis of impacts specific to the intended user group. In this report, the ‘Six Capitals Framework’ is used to structure analysis of the potential impacts on Tasmania’s GREs for the three time horizons within each scenario.

The Six Capitals Framework was developed by the International Integrated Reporting Council to help organisations understand how they generate value and the impact of

their activities.³⁶ It is an internationally recognised sustainability accounting mechanism that enables holistic evaluation of value creation over time and alignment with the UN Sustainable Development Goals.³⁷ The Framework is well-suited to understanding how climate change could impact the core components of Tasmania’s various GREs (see Table 4). Although the impact dimensions are tailored to GREs, they are likely to be useful for other Tasmanian businesses and community sector organisations.

Table 4: Overview of the impact dimensions

Dimension	Definition	Examples of potential climate impacts
Financial	The pool of funds available to an organisation for use in the production of goods or the provision of services. These funds may be from a range of sources, such as the sale of goods and services, investment financing, or government grants.	- Increased costs (e.g. retrofitting infrastructure for climate resilience, repairs following extreme weather events, rising insurance premiums, decarbonisation) - Revenue variability due to changes in customer base or pricing regulator outcomes - Opportunities for new renewable energy revenue streams - New government funding opportunities to incentivise investment in resilience and adaptation
Intellectual	An organisation's knowledge-based intangible assets. Includes systems, processes and protocols; patents and intellectual property; and tacit organisational knowledge.	- The need to revise systems and processes to manage climate impacts - Opportunities for development of IP related to managing climate impacts

Dimension	Definition	Examples of potential climate impacts
Manufactured	The physical assets an organisation uses in the production of goods or the provision of services. Includes infrastructure (e.g. roads, ports, rail, bridges), buildings, machinery, and IT equipment.	- Supply chain disruption - Extreme weather events destroy infrastructure - Service disruptions due to damaged infrastructure - Opportunities to develop more climate-resilient infrastructure
Social and Relationship	The quality of the relationships an organisation has with its stakeholders (which can include customers, partner organisations, contractors, funders, shareholders, regulators, etc.). Also includes reputation, community engagement and social licence to operate.	- Reduced customer trust due to service disruption, rising costs - Resource scarcity and competition lead to increasingly adversarial relationships among GREs - Impacts on stakeholder trust
Human	The capabilities, experience, and expertise of the people within an organisation, as well as their mental and physical wellbeing. Also includes the quality of leadership and management and the workforce's alignment with the organisation's goals and values.	- Extreme weather causes health and safety issues - Reduced international travel may make it harder to import skilled workers - Employees need to learn new climate adaptation skills
Natural	The renewable and non-renewable environmental resources that an organisation depends on and impacts. These can include air, water, land, forests, biodiversity, minerals, and animals. Also covers an organisation's environmental sustainability.	- Destruction of natural environment by extreme weather events - Reduced access to natural capital assets such as water and arable land - Increased food insecurity

For the time horizons within a scenario, each of the six impact dimensions has been assigned a trend symbol (see Figure 4), indicating the likely overall effect across GREs. These are intended to provide a simple visual indication of the broad trend applicable to most GREs, noting that impacts may vary depending on each GRE's unique circumstances.



Figure 4: Trend symbols used in this report

1.3 How to use the scenarios

[Qualitative scenarios] can be a useful starting point to explore the potential range of risk an organisation, region or community may face. (Department of Climate Change, Energy, the Environment and Water, 2025, 'Draft National Climate Scenario Guidance')

The scenarios presented below are not intended to predict the future. They are qualitative descriptions of possible futures designed to equip users with an understanding of the ways that climate change could affect them if those futures occur. It is important to note that the scenarios were developed to be broad enough to have relevance for all of Tasmania's GREs. This means that individual GREs will need to work through a process of understanding how each scenario could impact them, which could be achieved in two main ways.

First, the climate scenarios can be used as the basis for a risk assessment. In this approach, users identify any

organisational risks and opportunities arising from the scenarios, then prioritise these and develop appropriate strategies (see Figure 5). This process can be challenging because it involves distilling organisational-specific impacts from broad scenarios.

Second, users with existing, up-to-date risk registers could map key risks onto the climate scenarios (see Figure 6). This enables regulatory compliance while making use of existing organisational assets. However, this approach may overlook emerging and future risks not currently included on the register.

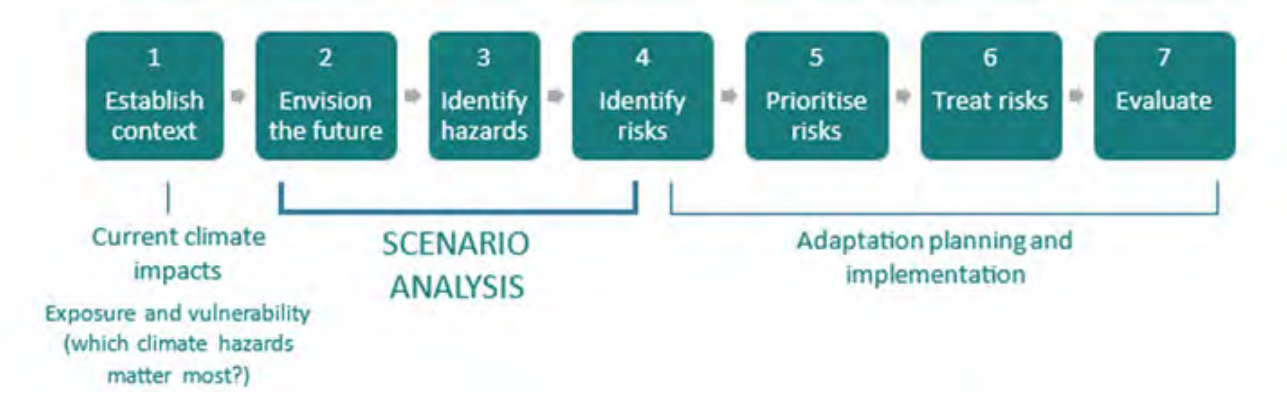


Figure 5: The Draft National Climate Scenario Guidance process of climate risk assessment incorporating scenario analysis

Risks	Risk type	Description	Anticipated impact	Scenarios / Time horizons
Increasing Natural Perils Costs	Physical	Ongoing climate change is anticipated to continue to increase the cost of natural perils. As standard insurance practice is to reprice for increased input and passthrough costs, it is assumed this would lead to higher insurance premiums. Significant premium price increases could lead to a reduction in the size of IAG New Zealand's addressable market.	Decreased insurance affordability could lead to an increase in underinsurance, self-insurance, or Government intervention, reducing the size of the private general insurance market and IAG New Zealand revenue, as well as associated reputational impacts.	Hot House scenario (long-term)

Figure 5: Example of mapping existing risk register onto climate scenarios
(image source: IAG New Zealand, 2025, *FY25 IAG New Zealand Climate-related Disclosure, Whakapuakanga e whai pānga ana ki te Āhuarangi*)

Regardless of the approach taken, the Draft National Climate Scenario Guidance recommends considering the following principles when using climate scenarios:³⁸

- **Prudent risk management:** It is important to take 'worst case' scenarios seriously due to their potential to disrupt or even break systems. These extreme scenarios can help provide insights into vulnerabilities and areas for action.
- **Compounding, cascading and systemic hazards:** Climate hazards often compound and amplify one another, creating rapid swings between extremes and/or 'tipping points'. It is important to consider these cascading impacts across interconnected systems.
- **Acute and chronic hazards:** Organisational planning should differentiate between acute hazards (the immediate impacts of more frequent and severe extreme

weather events) and chronic hazards (which occur over the longer term and may go unnoticed until they reach a critical level). However, the line between the two can often be blurred.

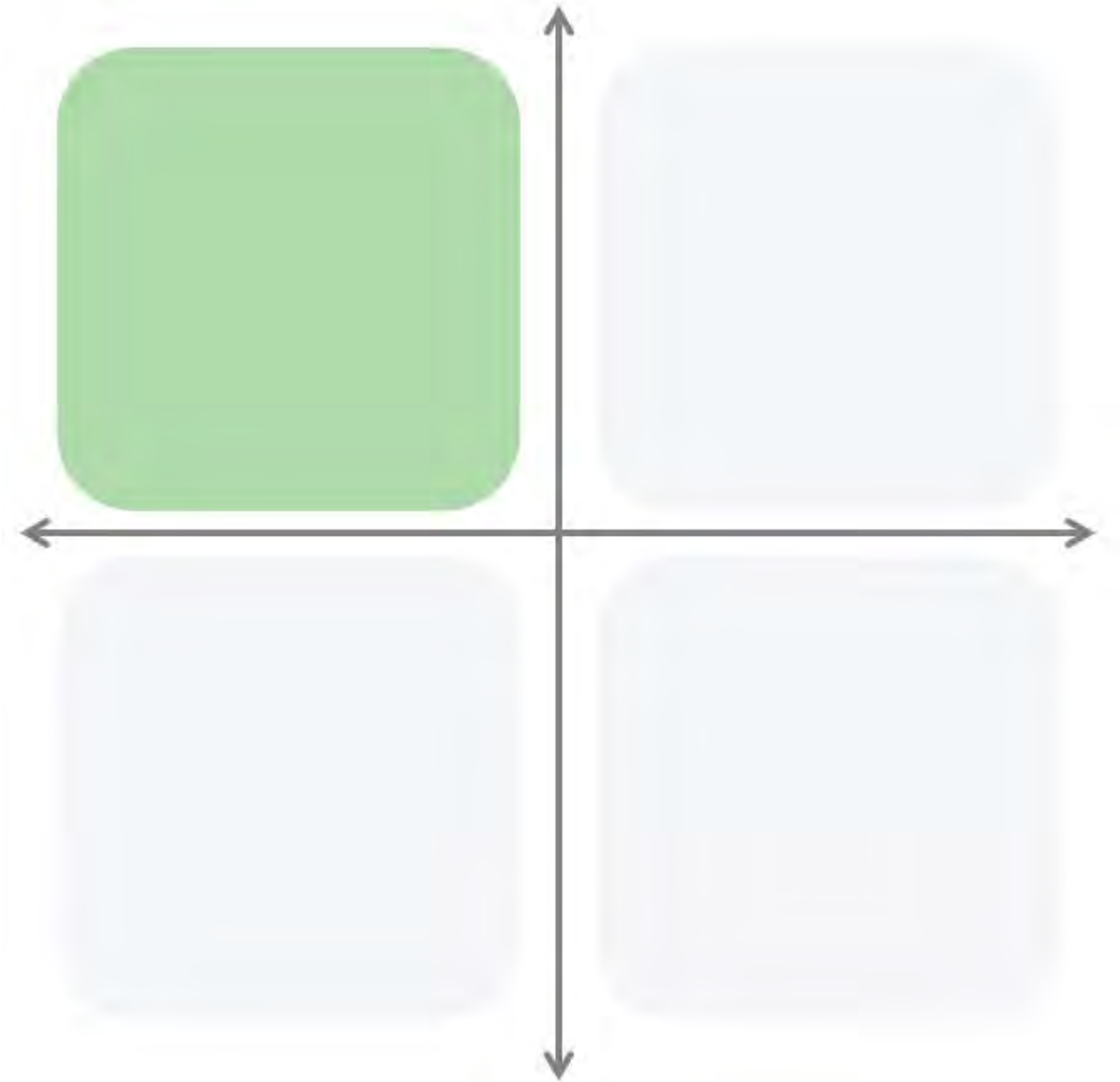
- **Longer-term changes:** Due to historic emissions and the length of time that environmental processes take to unfold, some changes that are already 'locked in' may take centuries to occur – even if global net-zero was achieved immediately.

Finally, noting AASB S2 requirements, noting AASB S2 requirements,³⁹ Tasmanian GREs could choose to assess their climate resilience against only two of the scenarios (one lower temperature and one higher temperature), or they could use all four. Using the full scenario set will provide a more comprehensive view of uncertainty and strengthen decision-making for long-term planning.

Detailed Scenarios



Scenario 1: Resilient Future



2030



Global

The global mean temperature has risen by 1.5°C from pre-industrial levels. This has increased the frequency and severity of extreme weather events, including flooding and fires, across the world.

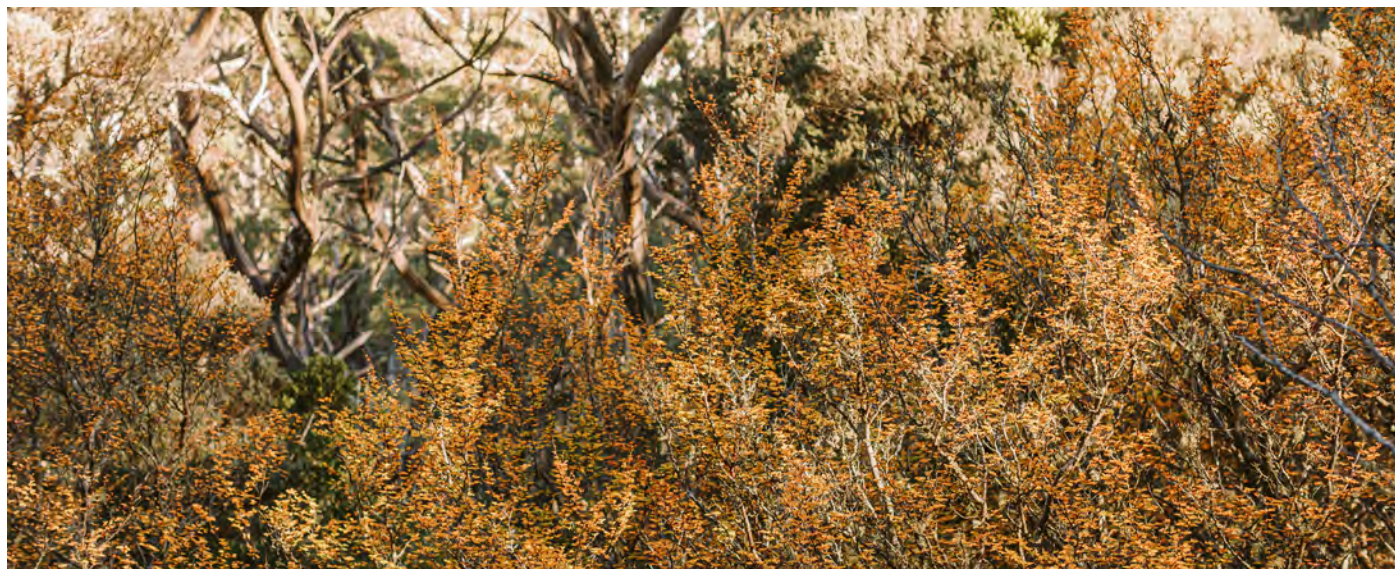
A rapid expansion of climate-related treaties, cross-border agreements, and trading instruments (such as carbon border adjustment mechanisms*) hastens the formation of low-carbon trading blocs, rewarding climate leaders and punishing laggards.

Global clean energy investment continues to exceed fossil-fuel investment and renewables dominate new energy generation capacity. This helps to further push down the cost of clean energy. Growth in green technology brings economic opportunities through job creation but also poses stranded-asset risks as fossil-fuel infrastructure becomes obsolete and is retired early.

Renewable technologies – such as solar, wind, and battery storage – continue to become more affordable for consumers, while businesses innovate with cleaner production processes. Climate-conscious lifestyle choices, including plant-based diets and low-carbon travel, are increasingly mainstream.

Although international efforts have limited temperature increases, the warmer climate is still contributing to the spread of tropical diseases such as dengue fever and malaria.⁴⁰

The threat of climate litigation is beginning to spur more ambitious action in countries that have been slow to reduce their emissions and adapt to the changing climate.



* These are policies that impose a levy on emissions-intensive imports to level the playing field for highly regulated domestic producers. The aim is to avoid the 'carbon leakage' that occurs when emissions-intensive producers move offshore. Zhong, J., & Pei, J. (2024). Carbon border adjustment mechanism: a systematic literature review of the latest developments. *Climate Policy*, 24(2), 228-242. <https://www.tandfonline.com/doi/full/10.1080/14693062.2023.2190074>



Australia

Mainland Australia is warming faster than the global mean temperature, with inland areas heating more rapidly than coastal areas.⁴¹ Australia is emerging as a world leader in climate action and has been a strong advocate for further global emissions reduction agreements. This has helped to improve relationships with Pacific countries, which appreciate Australia's efforts towards decarbonisation.

The Australian Government has legislated against all new fossil-fuel projects and is rapidly shutting down existing ones. All economic activities are assessed against emissions reduction goals, and the country is well on its way to reaching net zero by 2050.

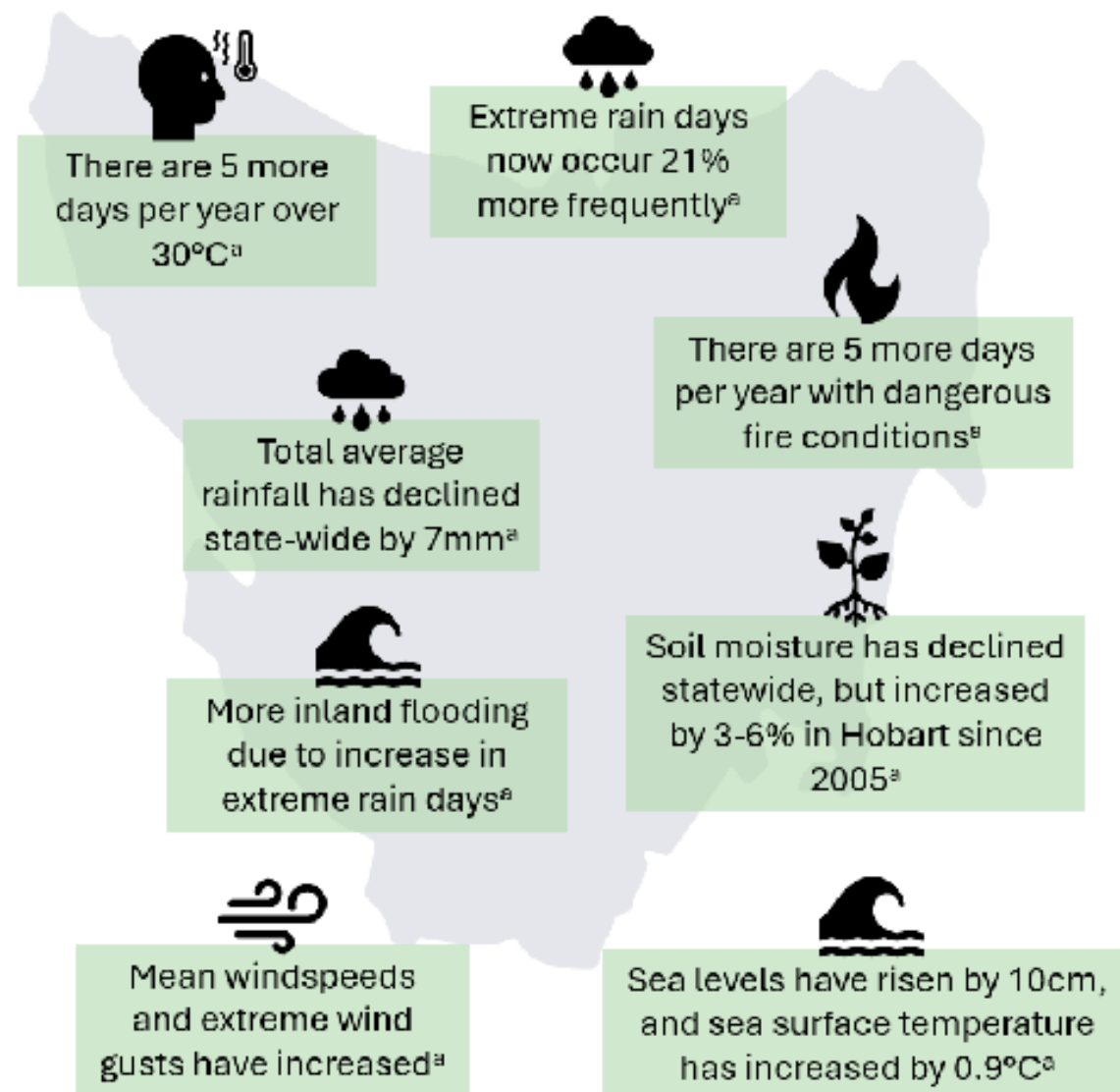
The Government recognises that the world could be heading towards more than 3°C of warming by 2100 if global efforts to reduce emissions fail. To prepare for this, it has ramped up adaptation measures. Key initiatives include using the proceeds from levies on domestic fossil fuel extraction and pollution to establish a climate resilience fund; requiring that all new building and infrastructure projects adhere to climate-resilience standards; and putting in place a mandatory Australian Nature Repair Market* (ANRM).⁴²

Rainfall is noticeably decreasing in the southern areas of Western Australia (WA) and in South Australia (SA), resulting in more time spent in drought. Combined with higher temperatures, this is leading to more devastating bushfires, especially in the southern and eastern parts of Australia. Extreme weather events such as flooding and cyclones are also becoming more common and severe.

Because of this, many Australian families and businesses struggle to get insurance in 'high risk' coastal and forested areas. Where insurance is available, the premiums are becoming unaffordable for many and are beginning to exclude 'climate change-related extreme events'. Federal and state governments begin to help hedge risk via publicly supported reinsurance pools and investments in resilience.

The increase in disasters is affecting global and domestic supply chains. Flooding and bushfires have meant that some critical perishables such as chemicals, medical and food supplies are not always available when and where they are needed. The Government is implementing circular economy practices and strategically investing in domestic production to counter supply chain disruptions.

* The Nature Repair Market is a national, legislated biodiversity market. Certificates are given to projects once a biodiversity outcome has been, or is likely to be, achieved. Under a mandatory scheme developers and other industries would be required to hold biodiversity certificates to undertake certain activities. Clean Energy Regulator (2025). Nature Repair Market Scheme. <https://cer.gov.au/schemes/nature-repair-market-scheme>



Although Tasmania is less severely impacted than the Australian mainland, climate change is already causing significant disruptions. There is an increase in severe weather events, heatwaves, and habitat loss. However, some negative impacts are mitigated by ambitious climate action.

Summer heatwaves arrive earlier and last longer. In some areas, residents endure three or four more high-heat days each year than in 2025. Each heatwave day contributes to as much as a 9% increase in all-cause mortality,⁴³ with older and vulnerable Tasmanians most affected. The Tasmanian Government's subsidy program for energy-efficient air-conditioning systems has helped limit the number of heat-related deaths.

The changing climate is already impacting the State's land and sea ecosystems. Alpine areas are drying out, and bushfires have destroyed stands of Pencil Pine and Deciduous Beech. Several endemic plant and animal species are on the edge of extinction. Pest infestations, disease outbreaks and algal blooms are increasingly common.

There is a moderate increase in the frequency and severity of extreme weather events. Effective government policy leadership on climate resilience and disaster risk reduction limits the negative impacts on Tasmania's society and economy, but this comes with significant up-front costs.

The Government continues to face fiscal challenges, with net debt expected to continue growing for at least five more years. However, a reputation for renewable energy and green industry has boosted Tasmania's international credentials, helping to attract investment.

Most of the commitments made in the sectoral Emissions Reduction and Resilience Plans (ERRPs) have been met. New, more ambitious ERRPs have begun to deliver absolute emissions reductions, meaning that Tasmania's net zero status is no longer so heavily dependent on carbon emissions removals by our forest estate.*

The State has exceeded the Tasmanian Renewable Energy Target (TRET) of generating 15,750 GWh of clean electricity in 2030 and is able to sell larger volumes of green power to the mainland. The Tasmanian Government has put in place a requirement for profits beyond a certain threshold to be distributed to consumers in the form of bill rebates. This means that revenue generated by energy exports is beginning to improve affordability for Tasmanian households.

On-island green hydrogen and Low Carbon Liquid Fuel (LCLF) production is helping to support industrial decarbonisation for hard-to-abate industries, as well as providing jobs and other co-benefits in regional communities.

Government investment in research, monitoring, and strategic planning is high. Projects include ongoing environment protection and restoration efforts. Adaptation policies such as managed-retreat flood risk rezoning, major infrastructure retrofits and upgrades, and cutting-edge passive design standards for new buildings are also a focus. The Government is also focusing efforts on the prevention of species extinction and the protection of ecosystem services. As such, the Tasmanian Government has helped to strengthen the ANRM which is now mandatory.

Widespread agreement that climate action is essential helps to build social cohesion, but intergenerational tensions over historic climate inaction continue to fester.

*Tasmania's net zero emissions status relies on removals of carbon by our forests and soils to exceed absolute emissions. Tasmanian Policy Exchange (2025), 'Tasmanian Greenhouse Gas Emissions Update Annual progress report for the 2023 reporting year', 8-9, https://www.utas.edu.au/_data/assets/pdf_file/0008/1825487/GHGU04_EmissionsUpdate2023ReportingYear_V1.pdf

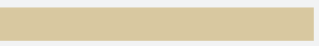
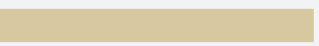
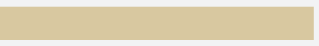
**Extreme weather event:
Kunanyi/Mount Wellington bushfire**

Despite significant preparation and planning, areas of Kunanyi/Mount Wellington have been ravaged by a recent bushfire. Triggered by dry lightning, the fire rapidly spread due to a combination of high temperatures, high winds and low soil moisture.⁴⁴ Three lives were lost and 11 people were severely injured. Ember attacks caused the destruction of 150 houses across Glenorchy, Mount Stuart, and West Hobart. There was significant infrastructure damage, with major transmission lines downed in the hills above Glenorchy. Water catchments were contaminated but forward planning meant that it was possible to turn to alternative water supplies. Smoke from the bushfire caused high levels of respiratory attacks requiring hospitalisation.

As bad as the impacts were, it is widely recognised that strategic planning, readiness actions and rapid responses from emergency services prevented greater losses. Thanks to proactive backburning and regular maintenance of key fire trails, emergency responders were able to travel quickly and prevent some of the worst damage.



2030 Sector Impacts

	Financial Capital • Despite a challenging fiscal environment, the Government and GREs work together to manage expectations around dividends. • GREs experience rising costs, largely due to infrastructure damage caused by an increasingly challenging climate. • With Government support, GREs are ramping up investment in their climate resilience and decarbonisation. This comes with substantial up-front costs. • Clean electricity sales to the mainland boost revenues, and a climbing Australian Carbon Credit Unit (ACCU) price increases the profitability of Tasmania's plantation forests.
	Intellectual Capital • Strong Government leadership means that climate-related R&D is thriving. • GREs revise some of their systems and processes to cope with an increase in extreme weather events, in some cases making them world leaders in adaptation. • Some GREs benefit from opportunities to develop intellectual property (IP) related to managing climate impacts.
	Manufactured Capital • The frequency and severity of extreme weather events cause some supply-chain and infrastructure-related disruptions, which is particularly challenging for GREs that manage large and complex infrastructure portfolios. • The increasingly challenging climate requires more regular infrastructure maintenance, renewal, and restoration. • Government regulations mean that new infrastructure must adhere to strict climate-resilience standards.
	Social and Relationship Capital • GREs' social license is maintained despite some service disruptions and increased cost of services. • Sufficient resources mean that GREs are not forced into competition and continue to work cooperatively.
	Human Capital • GRE workforces are under pressure to do more with less in the face of budget constraints and growing costs, which causes mental health challenges for some employees. • There are growing physical and mental health risks for staff working outdoors due to rising temperatures and more frequent and severe extreme weather events. Recognising this, the Government introduces more rigorous work health and safety regulations. • GREs benefit from more proactive government investment in developing a skilled domestic workforce, including innovative approaches to education and training reform.
	Natural Capital • Rising temperatures and the increased frequency and severity of extreme weather events are beginning to change the State's land and sea ecosystems. • The Government is supporting R&D and strengthening policies to prevent species extinction and protect ecosystem services, consistent with the ANRM.⁴⁵ It is also ramping up its biosecurity protections.

2050



Global

Most developed countries have met their net-zero goals on schedule, and the planet is approaching carbon neutrality. Paris Agreement targets have been met in time to limit warming to 1.5°C. While the worst impacts have been avoided, there are still increased instances of fire, flooding, drought, destructive winds, and cyclones across the globe. This results in numerous lives lost and immeasurable damage to built and natural environments.

A harmonised multinational carbon-pricing instrument operates across most developed markets.

All but the hardest-to-abate modes of transport (such as aviation and long-haul freight and shipping) have been electrified. LCLFs, including sustainable aviation fuel, renewable diesel, biodiesel, and green hydrogen power the remainder.

A 'digital twin' of Earth drastically improves weather and climate forecasting and climate risk management.*

With less than one per cent of the world's electricity now produced from fossil fuels, grids across the developed world have been overhauled to support electrification, smart demand management, distributed storage, and the more volatile generation and usage dynamics of renewables.⁴⁶



*A digital twin is a detailed, virtual replica that uses real-time data, advanced simulations, and AI to model and predict Earth's systems and processes.



Australia

Although the Australian Government has achieved its goal of net-zero emissions, the effects of climate change are nonetheless profound. The country is having to come to terms with a changing environment.

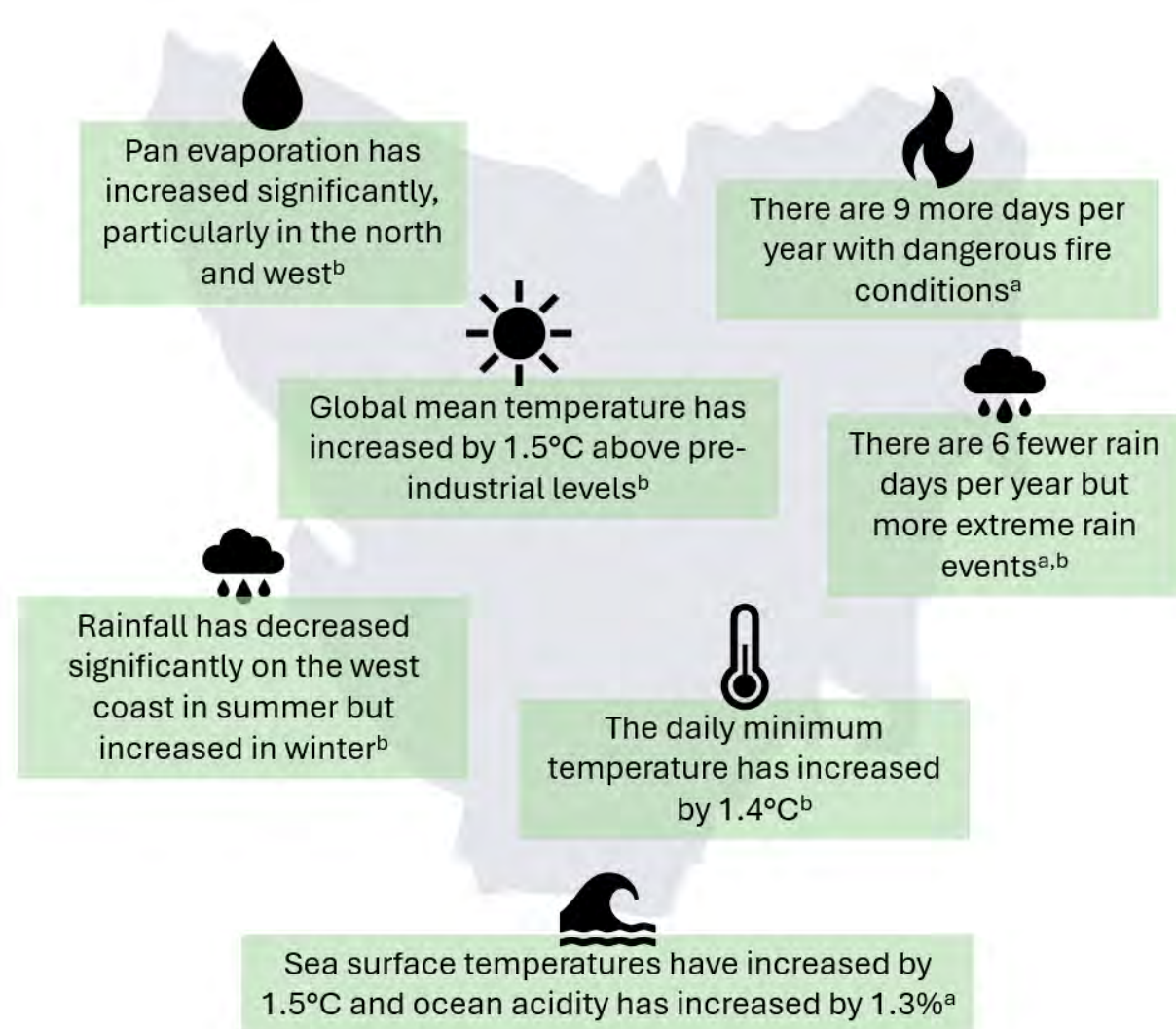
Impacts vary significantly across the continent. Temperature rises are greater in northern and inland areas, with places such as Alice Springs and Cairns experiencing 12 extra days of extreme heat annually.⁴⁷ More intense tropical cyclones cause extensive damage and cut off towns for weeks at a time.⁴⁸ Changes in average rainfall also vary across the country but tend towards greater periods of dry interspersed with heavy rainfall events. One thing that is consistent nationally is increased susceptibility to fire – even for wet forested areas.

Flooding is a major issue. Increased runoff, extratropical storms, sea-level rise, and amplified storm tides combine to cause extensive damage, including landslips.⁴⁹ Numerous communities, such as Ballina, have abandoned low-lying areas and rebuilt elsewhere. Governments have facilitated relocation.

Despite government action to build resilience, the cost of extreme weather events has continued to increase. This makes it difficult for individual Australians, GREs, and private companies to afford comprehensive insurance.⁵⁰

Leveraging opportunities of the transition to net zero, Australia's manufacturing base has become more specialised and highly skilled, supporting continued economic growth. To insulate against supply chain shocks, the Government has incentivised domestic production of crucial goods such as medical supplies, some of which are being exported to Pacific countries. This has simultaneously deepened regional partnerships and increased economic resilience.⁵¹

Despite investment in R&D, agriculture and the energy sector face challenges in adapting to changed climate conditions. While strong biosecurity measures minimise the introduction of foreign diseases and pests, outbreaks occasionally disrupt food production.⁵²



The effects of climate change in Tasmania, due to historical emissions, are acute. While ongoing planning and investment in emissions reductions and adaptation are paying off, the State is still experiencing changes in its environment, society, and economy.

Due to the moderating influence of the Southern Ocean, Tasmania experiences a slightly lower temperature rise than the global mean.⁵³ However, extreme heatwave conditions have still become more frequent, and there are nine additional days per year (compared to 2025) with dangerous fire conditions.⁵⁴

An emerging pattern sees increased rainfall over the northern East Coast in autumn and spring, while northwestern and inland areas such as the Central Plateau have experienced a steady decrease across all seasons.⁵⁵ Some areas have seen as much as a 50% decline in rainfall in autumn and a 10-20% decline in spring, causing challenges for agricultural production, drinking water delivery, and hydroelectric power generation.

Additionally, rainfall events have tended to be heavier and are interspersed with longer dry periods, increasing runoff events and making river water treatment more difficult and energy intensive.⁵⁶

On the positive side, some forestry plantation species and agricultural crops (such as wine grapes) are becoming more productive due to increased temperatures.⁵⁷

Wind speeds are higher in July through to October than pre-2025 levels, which causes significant damage to Tasmania's natural and built environments – particularly when coinciding with extratropical storms or periods of dry.⁵⁸

There are significant and sustained negative impacts to ecosystems and changes to ecological integrity.⁵⁹ In some areas, these changes are proving irreversible. Despite innovations in bushfire detection and fuel load management methods, bushfires have scarred the Tasmanian landscape, with iconic species such as the Huon Pine and Deciduous Beech fighting extinction.

Tasmania has maintained its net-zero emissions status through strong action and whole-of-government coordination. The State's fiscal situation has stabilised thanks to earlier investments in education and training, electricity sales to the mainland, and increased inflows of private capital attracted by Tasmania's reputation for climate leadership. The State is a significant producer of clean fuels such as e-methanol and green hydrogen, and Bell Bay and Burnie are both important green industrial hubs.

Despite challenges, investment in resilient generation, transmission, and distributed storage ensures electricity is plentiful and cheap, and that power outages are only occasional and minimised. Communities are benefitting from income derived in return for hosting renewable energy projects through benefit sharing and local jobs.

Strategic planning and investment by all levels of government, GREs, and private enterprise in previous decades ensures infrastructure is incrementally replaced to higher standards to mitigate potential damage and meet climate resilience requirements. Preventative infrastructure (such as flood levees and nature-based solutions*) is paying dividends. However, many areas – including Hobart – struggle to manage the additional 13 coastal flood days per year caused by sea level rise and more frequent and extreme rain events.⁶⁰

Tasmania's population experiences stable, steady growth. The lower levels of warming are attracting some people to the State, but many are content to continue living in hotter parts of Australia.

* Nature-based solutions use natural systems such as coral and oyster reefs, mangroves, and wetlands to buffer surges, absorb wave energy and reduce erosion. Justine, Y. E. D., & Seenath, A. (2025). Vegetative nature-based solutions for coastal flood risk management: Benefits, challenges, and uncertainties. *Ocean & Coastal Management*, 261, 107520. <https://www.sciencedirect.com/science/article/pii/S0964569124005052>

**Extreme weather event:
Storm surge in the southeast**

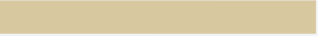
A storm surge recently hit Lauderdale, Cremorne, and surrounds, inundating low-lying areas. Strategic risk assessment and planning had ensured that people relocated away from the most vulnerable properties over the previous decade. State-of-the-art weather forecasting and an effective emergency warning system enabled early evacuation, likely saving lives. Preventive measures such as seawalls helped to limit the damage.

Nevertheless, some houses were severely damaged, and erosion undermined the structural integrity of several more. Many households were un- or under-insured, creating a large financial burden for residents.

In the aftermath, some septic tanks overflowed, and cleanup activities had to contend with contaminated water. Overall, good coordination and planning meant that the cleanup was efficient, and services were rapidly restored to affected areas.



2050 Sector Impacts

	Financial Capital - GRE costs are higher than earlier in the century because of climate change impacts, including extreme weather events. - Proactive investments in climate resilient infrastructure have moderated maintenance costs, but these are still taking up an increasing share of GRE budgets. - Revenue from clean electricity sales to the mainland has peaked because new generation and increased storage capacity have reduced other states' reliance on Tasmanian green energy.⁶¹
	Intellectual Capital - GREs continue to update systems and processes to cope with the changing climate. - Some GREs are benefiting from having developed IP related to managing climate impacts. - New technologies (including AI, LiDAR, and enhanced data processing) and climate modelling contribute to more efficient and effective GRE operations.
	Manufactured Capital - Extreme weather events continue to disrupt supply chains, but the impacts are minimised by improved domestic manufacturing capability and investment in climate resilient infrastructure. - The increasingly challenging climate requires more regular infrastructure maintenance, renewal, and restoration. - Earlier investments in climate resilience mean that negative impacts on GRE infrastructure are manageable.
	Social and Relationship Capital - GREs' social license is maintained despite some service disruptions and increased cost of services. - There are some tensions between GREs due to the need for careful management of the State's natural resources.
	Human Capital - The combination of a highly skilled local workforce and skilled migrants means that GREs can meet their workforce needs. - The increase in heatwaves and extreme weather events means that there are more days when outdoor work cannot be conducted; it also means that employees are working from home more often and taking more frequent sick and stress leave. - Climate-resilient infrastructure, strategic planning, and new remote maintenance technologies reduce the need for some outdoor work.
	Natural Capital - The State's land and sea ecosystems are still adapting to the changed climate. - The Government's earlier policy interventions and investments in R&D are supporting effective environmental management and biosecurity measures. - Higher average temperatures have improved growing conditions for some crops and plantation species, but others are negatively affected by changing rainfall patterns, diseases, and pest species. - Natural resources need to be carefully managed due to inconsistent rainfall, the increased threat of bushfires, and competition among GREs.

2090



Global

Global warming continues to be limited to 1.5°C. Most developed countries have committed to the long and expensive process of recapturing a responsible portion of their historic emissions to return the Earth's climate to a safe and stable condition. As a result of these efforts, the planet has recently achieved net-negative emissions status – but some of the damage is irreparable.

The distributional consequences of climate action, and the disproportionate impact felt by low-income countries, are being redressed by a Global Resilience and Adaptation Fund. The Fund provides reparations and adaptation support to less-developed countries devastated by climate change.

It is widely acknowledged how much worse the situation could have been without global action. But the environmental impacts remain difficult to navigate for many. Bushfire seasons rage hotter than before, with many countries experiencing extreme fires and floods every year.

The world no longer relies on fossil fuels, and an abundance of cheap renewable electricity supports productivity growth and wellbeing in many countries.



Australia

Despite higher than global mean temperatures, the worst projected impacts of climate change have been avoided in Australia, as emissions reduction, adaptation, and resilience have been at the forefront of national policy since the 2030s. Unstable climate conditions are now the 'norm', and people are adapting to the new environment.

Temperatures have continued to be stable. Rainfall patterns have continued trends consistent with the 2050s, with large portions of the continent generally dryer, while simultaneously experiencing heavier rainfall events. The amount of forested area has reduced, having transitioned to grass and scrubland. Intense bushfires have become less frequent than in the 2050s.⁶²

A sustained and committed program of restoration and expansion of protected areas has limited species and habitat loss as much as possible, but enormously valuable ecosystems have been significantly degraded. For example, the Great Barrier Reef has been decimated by successive marine heatwaves and bleaching events. Its multi-billion-dollar tourist industry is a distant memory.

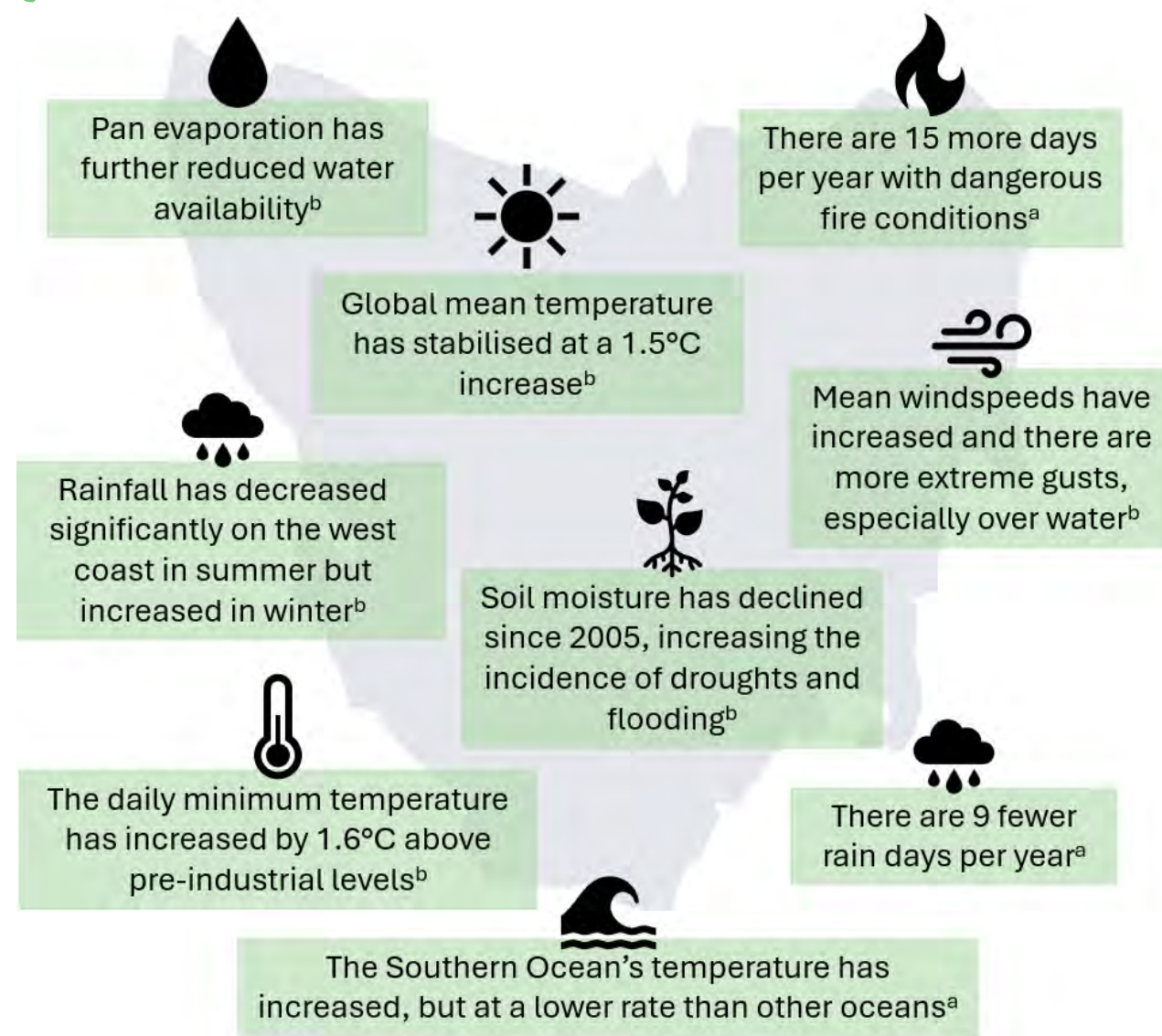
Despite Government efforts to bolster resilience, sea-level rise and associated damage continues to be an issue, with ocean temperatures responding more slowly to emissions recapture efforts.⁶³

Early recognition that coastal property, transport corridors, and energy assets were vulnerable to climate impacts led to defensive infrastructure investment, and managed retreat from locations of critical risk. Even so, adaptation and residual-damage response together form a major component of the Federal Budget. The amount spent on disaster recovery each year has increased by an average of more than seven times 2025 levels.⁶⁴

Australia's supply chains and broader economy are generally resilient, despite occasional disruptions due to extreme weather and international events. For example, Australia enjoys high levels of food security thanks to proactive planning in areas including seed collection, diversification of agricultural production, manufacturing, distribution, and trade.

National investment in the development of technologies aiding carbon sequestration, fine-scale climate modelling, and weather forecasting enabled strategies for climate change mitigation and adaptation. For example, this has enabled effective management of water for domestic uses, food production, environmental flows, and hydroelectricity purposes.

2090


 Tasmania


Warming levels have remained relatively stable since 2050, with Tasmania continuing to experience a lower temperature rise than the global mean and the Australian mainland.⁶⁵ Although extreme weather events do still occur, their frequency and severity have stabilised since the middle of the century.

Sea-level rise in Tasmania is approaching half a metre, and east coast water temperatures have risen by 2-3°C.⁶⁶ More than 25% of the Tasmanian coastline suffers from periodic inundation and erosion events.

Despite a sustained national focus on environmental protection and restoration, Tasmania's precious alpine ecosystems (among others) have suffered sustained and irreversible damage due to drying and fires. The Cradle Mountain and Walls of Jerusalem national parks have been badly affected, and Pencil Pines and Deciduous Beech have become extinct in the wild.⁶⁷

The combination of dry soils and heavy rainfall events continues to be a challenge for agriculture and other primary producers. The worst effects have been mitigated by the widespread adoption of regenerative approaches and new, diversified crop species. These improvements have also supported higher yields for many crops.

Opportunities offered by changed conditions have been seized. For example, a relatively benign climate and proactive biosecurity policy cements Tasmania's position as one of the world's premier high-value agricultural producers. Demand for Tasmanian wine (and wine tourism) surges as former cool-climate regions in Europe and elsewhere struggle.

Effective coordination with other federal, state, local government agencies and non-government organisations continues to underpin adaptation, hazard risk reduction, and disaster-response preparedness, relief and recovery.⁶⁸

Tasmania is benefitting from a dynamic, resilient and growing economy.⁶⁹ This has been supported by the Tasmanian Government (and the Federal Government), investing in de-risked supply chains, infrastructure, education and training systems, and specialist manufacturing.

Leveraging continued opportunities from the transition to net zero, living standards have been maintained. In the face of increased climate migration, social cohesion has been safeguarded through effective and equitable wealth distribution, ongoing investment in mental and physical health supports, and proactive housing policy.

Enabled by technological developments, electricity production and storage are far more diversified and decentralised. Most households have their own solar panel and battery system, which helps to reduce the negative impact of extreme weather damage to energy infrastructure such as powerlines.

While other Australian states, such as SA, are now heavily reliant on recycled and desalinated water for drinking supplies, proactive investment in distributed collection and processing ensures an almost constant supply of quality water for Tasmanians. Recycled water technologies enable widespread irrigation of crops and gardens, providing a buffer for dry periods.

**Extreme weather event:
Launceston flood**

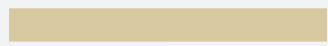
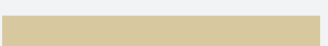
Recently, a compound estuarine flood occurred in Launceston. This was caused by a combination of elevated water levels in the Kanamaluka / Tamar Estuary (due to storm tides) and simultaneous flooding of the North and South Esk Rivers.⁷⁰ The effects of the flood were mitigated by effective adaptation measures implemented over the previous decade, including a major upgrade of the flood levee system. Additionally, many homes and businesses located in low-lying suburbs had been relocated through a staged process. Advanced weather forecasting and emergency warning systems ensured that the population was evacuated early and in an orderly manner.

The flooding did not reach central Launceston thanks to the new protective infrastructure. However, there was damage to around 40 houses, numerous suburban businesses, and some infrastructure. The impacts would have been much worse if not for earlier investment in climate resilient infrastructure. No lives were lost.

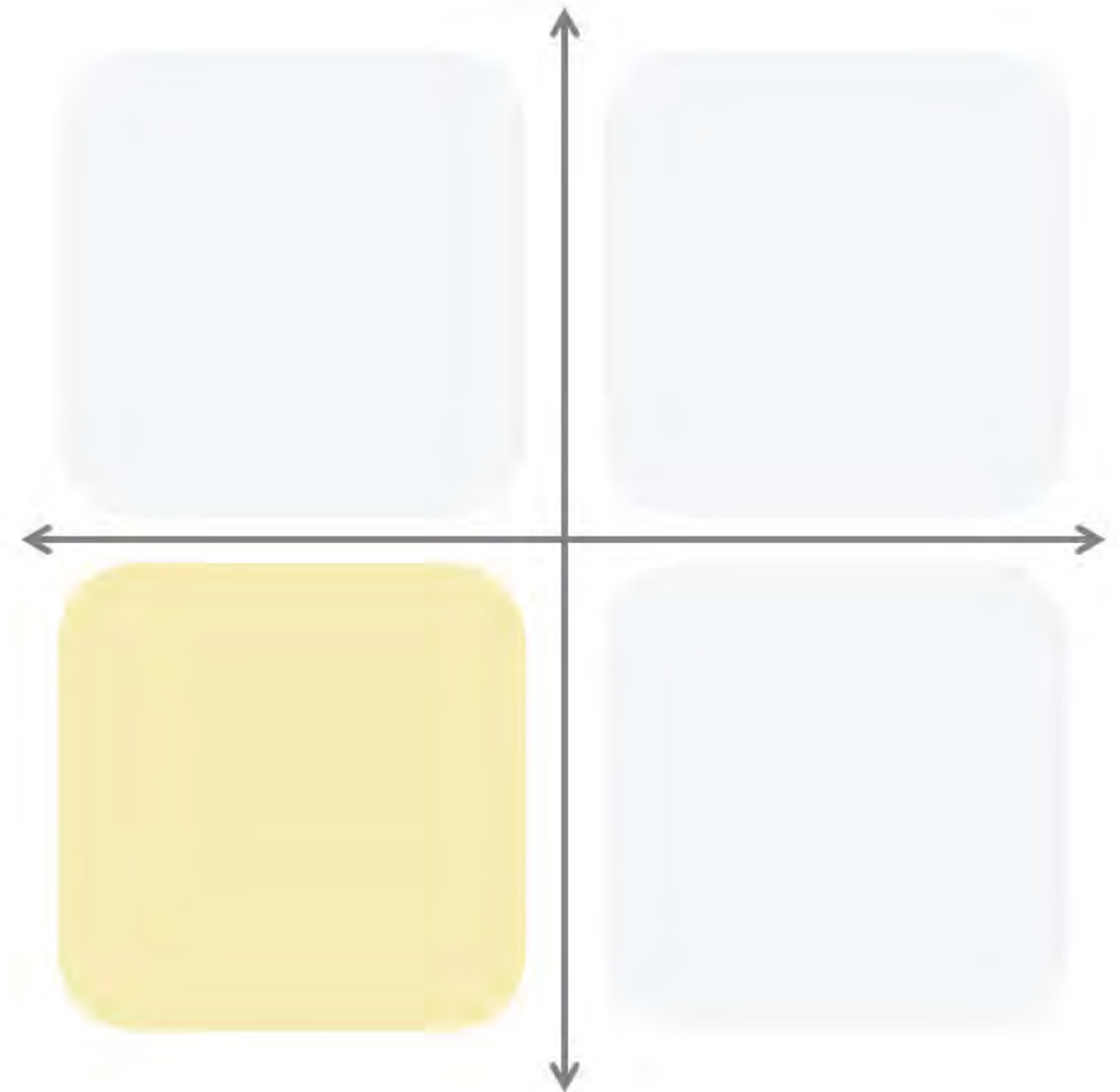
Only a relatively small emergency response was required due to the small scale of the disaster. The recovery process was efficiently delivered according to plans that had been developed several years earlier and regularly updated. The Government quickly established a reconstruction fund that is enabling uninsured residents and business owners to rebuild.



2090 Sector Impacts

	Financial Capital - Financial pressures due to climate change continue but are moderated by forward planning and more resilient infrastructure. - Tasmania's increased population has expanded the customer base for some GREs, enabling financial efficiencies thanks to improved economies of scale. - The State's early clean energy leadership attracted many profitable industries to Tasmania, which are now boosting the economy and enabling increased Government investment in GREs.
	Intellectual Capital - New technologies are helping GREs to dynamically adapt their business models to cope with the impacts of climate change. - Risk assessments and adaptation strategies have become more sophisticated and are important intellectual assets for GREs.
	Manufactured Capital - Extreme weather events continue to disrupt supply chains, but the impacts are minimised by improved domestic manufacturing capability and investment in climate resilient infrastructure. - Negative climate impacts on infrastructure are minimised through improved resilience and maintenance strategies that utilise new technologies. - GREs support the continued growth of green industries.
	Social and Relationship Capital - GREs' social license is maintained despite some service disruptions and increased cost of services. - Disagreement about the management of natural resources (such as water) causes some tensions among GREs, but the Government plays an active role in managing these.
	Human Capital - Tasmania's well-established skilled workforce means GREs can easily meet their workforce needs. - Flexible working arrangements have become the norm due to technological advances and the regularity of extreme weather events.
	Natural Capital - The State's land and sea ecosystems have been irreversibly altered by climate change. - Widespread use of regenerative agriculture has helped to ameliorate many of the negative impacts of climate change on arable land. - Natural resources need to be carefully managed due to inconsistent rainfall, the increased threat of bushfires, and competition among GREs.

Scenario 2: Missed Opportunities



2030



Global

The global mean temperature has risen by 1.5°C compared to pre-industrial levels. This has increased the frequency and severity of extreme weather events, including flooding and fires, across the world.

A rapid expansion of climate-related treaties, cross-border agreements, and trading instruments (such as carbon border adjustment mechanisms) hastens the formation of low-carbon trading blocs, rewarding climate leaders and punishing laggards.

Global clean energy investment continues to surpass fossil-fuel investment and renewables dominate new energy generation capacity. This helps to further push down the cost of clean energy. Growth in green technology brings economic opportunities through job creation but also poses stranded-asset risks as fossil-fuel infrastructure becomes obsolete and is retired early.

Renewable technologies – such as solar, wind, and battery storage – continue to become more affordable for consumers, while businesses innovate with cleaner production processes. Climate-conscious lifestyle choices, including plant-based diets and low-carbon travel, are increasingly mainstream. Meanwhile, rising temperatures are contributing to the spread of tropical diseases like dengue fever and malaria.⁷¹

The threat of climate litigation is beginning to spur more ambitious action in countries that have been slow to reduce their emissions and adapt to the changing climate.



Australia

The Australian Government is falling behind international efforts to reduce emissions and develop adaptation strategies. Mainland Australia is warming faster than the global mean temperature because inland areas heat more rapidly than coastal areas.⁷²

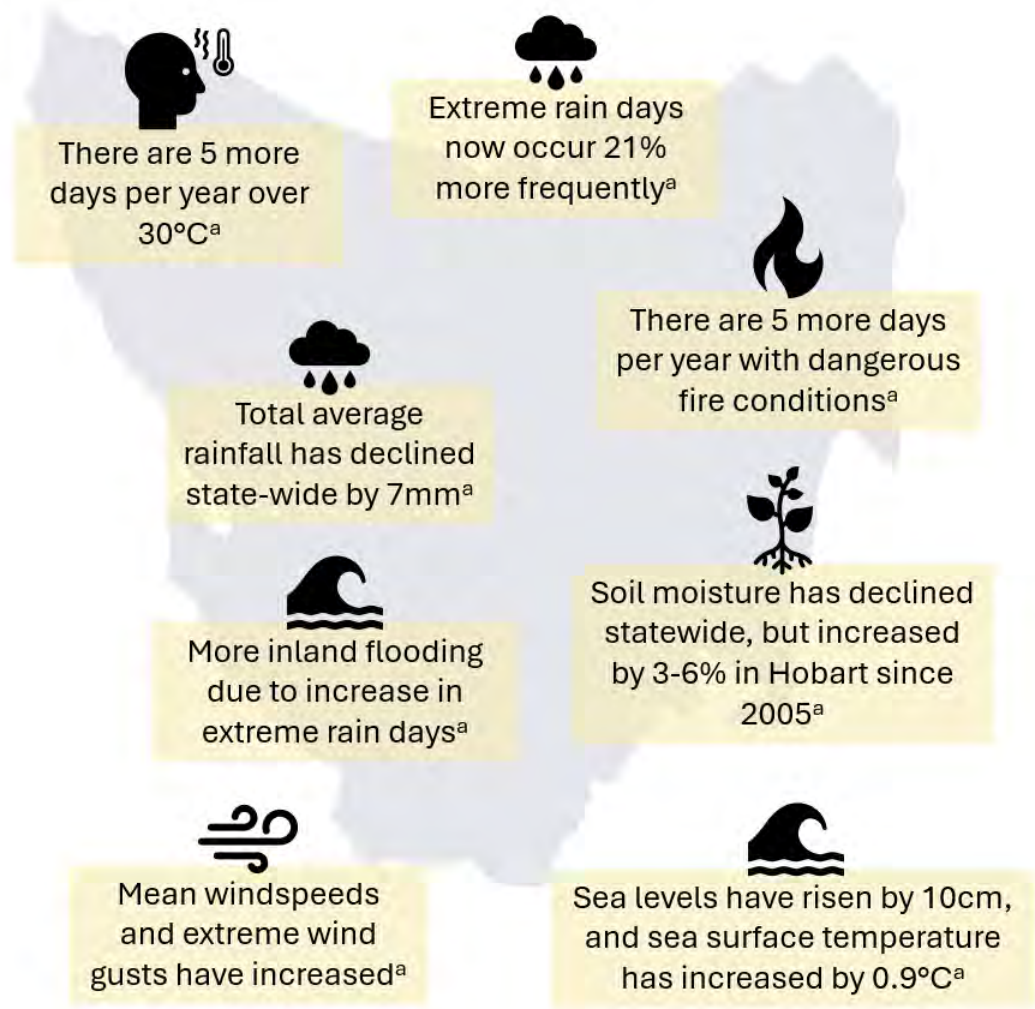
Rainfall is beginning to noticeably decrease in the southern areas of WA and in SA, resulting in more time spent in drought. Due to a lack of wide-spread infrastructure planning, water resources are becoming scarce and of lower quality, with inequitable distribution across the nation. Seeing opportunities, private companies have begun investing in desalination plants, but these may take years to come online.

Drought and higher temperatures are leading to more devastating bushfires, especially in the southern and eastern parts of Australia.⁷³ Extreme weather events such as flooding and cyclones are also becoming more frequent and severe. Because of this, many Australian families and businesses struggle to get insurance, particularly in 'high risk' coastal and forest areas. Where insurance is available, the premiums are becoming unaffordable for many and are beginning to exclude 'climate-change related extreme events'.

The increase in disasters is continuing to affect global and domestic supply chains. Flooding and bushfires have meant that some critical chemicals, medical and food supplies, and some perishable goods are not always available when and where they are needed.

There is increasing societal polarisation. Many concerned citizens, frustrated by the lack of state and federal government action, have resorted to increasingly disruptive campaigning. Those who believe climate action is unnecessary criticise these activists, and the rhetoric on both sides is becoming increasingly violent. Independent, pro-climate action candidates continue to do well in urban electorates, inflaming inter-regional political tensions. Corporations and businesses still try to maintain green credentials to appeal to consumers and increase sales. For some companies, this has meant beginning to shift operations overseas.

2030
Tasmania



Although Tasmania is less severely impacted than the Australian mainland, climate change is already causing significant disruptions. The Tasmanian Government is not allocating significant resources to emissions reduction and adaptation planning.

Summer heatwaves arrive earlier and last longer. In some areas, residents endure three or four more high-heat days each year than in 2025. Each heatwave day contributes to as much as a 9% increase in all-cause mortality,⁷⁴ with older and vulnerable Tasmanians most affected. Limited Government action means that heat-related deaths are higher than they could have been.

The changing climate is already impacting the State’s land and sea ecosystems. Alpine areas are drying out, and bushfires have destroyed stands of Pencil Pine and Deciduous Beech. Several endemic plant and animal species are on the edge of extinction. Pest and weed infestations, disease outbreaks, and algal blooms are increasingly common.

There is a moderate increase in the frequency and severity of extreme weather events. This has caused disruptions for many and meant that several communities have had to relocate while they wait for a slow and costly rebuild process after recent flooding events. There has been little Government support available to these communities.

The Government continues to face fiscal challenges, with net debt expected to continue growing for at least five more years. Fading Tasmanian Government support has meant that the State has only met a few of the commitments outlined in sectoral ERRPs. Many climate-related grant programs have been wound up due to funding challenges and low political appetite. Tasmania is at risk of losing its net-zero status, to the dismay of businesses that trade on our ‘clean, green’ reputation.

Regulatory barriers make it difficult and expensive to progress renewable energy projects. As a result, Tasmania is generating three to four times less wind power than it could and has failed to meet the TRET. Imported fossil fuels remain the predominant source of power for transport and some industrial uses.

Renewable technology uptake has been slower than expected, with private businesses proving to be the main drivers. However, many businesses and investors are considering moving to countries that prioritise climate action, because they are concerned about being shut out of the emerging low-carbon trading blocs.

Similarly, Tasmanians who care about climate action and can afford to move are beginning to leave the State, and international migrants are beginning to avoid Australia. Still, Tasmania is seen as ‘the best of the worst’ in Australia in terms of climate impacts, causing some to move from hotter regions (such as areas of Queensland and WA) to the State. Overall, population is beginning to decline slightly, leaving behind more disadvantaged populations.

**Extreme weather event:
Kunanyi/Mount Wellington bushfire**

Kunanyi/Mount Wellington and surrounding areas of Greater Hobart have been ravaged by a recent bushfire. Triggered by dry lightning, the fire rapidly spread due to a combination of scorching temperatures, high winds and low soil moisture.⁷⁵ A lack of effective planning exacerbated the effects of the fire: key fire trails (such as Big Bend) were in poor condition, making it difficult for firefighters to respond effectively; and the lack of backburning meant that the fire burned hot and travelled fast. Help from interstate was minimal as personnel and firefighting equipment were engaged with devastating fires in their own regions. Nearly 100 people died and 9,000 lost their homes. Suburbs affected included Glenorchy, Mount Stuart, West Hobart, Fern Tree, South Hobart, Mount Nelson, Tarooma, and Kingston.

Recovery from the fire has been slow. Important infrastructure was destroyed, including critical transmission lines in the hills above Glenorchy, causing ongoing power outages for large parts of Hobart. The Waterworks Reserve and other catchments have been damaged, impacting drinking water supplies for several years. Many schools and businesses have had to shut for nearly a month. The Government has been forced to borrow significant amounts to fund reconstruction efforts, worsening an already perilous debt situation. A huge number of Hobart residents still don't have permanent accommodation, and mental health services are unable to meet demand.



2030 Sector Impacts

	Financial Capital • Government budgets focus on near-term objectives, with climate resilience considered a low priority. • GREs experience rising costs, largely due to infrastructure damage caused by an increasingly challenging climate. • Limited renewable energy generation capacity has reduced opportunities for revenue from electricity sales to mainland Australia. • Tasmania’s increasingly productive plantation forests offer additional revenue generation opportunities.
	Intellectual Capital • A lack of Government leadership means that domestic climate-related R&D is stagnating. • Valuable institutional knowledge is starting to be lost because of increasing staff turnover driven by a less satisfying – and for some, more dangerous – work environment.
	Manufactured Capital • The frequency and severity of extreme weather events cause some supply-chain and infrastructure-related disruptions, which is particularly challenging for GREs that manage large and complex infrastructure portfolios. • The increasingly challenging climate requires more regular infrastructure maintenance, renewal, and restoration. • A lack of Government support makes it expensive to upgrade infrastructure to be more climate resilient.
	Social and Relationship Capital • GREs’ social license is largely maintained despite some service disruptions and increased cost of services. • Sufficient resources mean that GREs are not forced into competition and continue to work cooperatively, but the Government’s lack of climate action causes some tensions.
	Human Capital • GRE workforces are under pressure to do more with less in the face of budget constraints, causing mental health challenges for some staff. • The increase in heatwaves and extreme weather events means that there are more days when outdoor work cannot be conducted; it also means that employees are working from home more often and taking more frequent sick and stress leave. • The lack of state-level policy and planning across education and training, population, and workforce development are beginning to be felt, with skills shortages worsening.
	Natural Capital • Rising temperatures and the increased frequency and severity of extreme weather events are beginning to change the State’s land and sea ecosystems. • The Government is not focused on improving the resilience of Tasmania’s environment to climate change.

2050



Global

Most developed countries have met their net-zero goals on schedule, and the planet is approaching carbon neutrality. Paris Agreement targets have been met in time to limit warming to 1.5°C. While the worst impacts have been avoided, there are still increased instances of fire, flooding, drought, and cyclones across the globe. This results in numerous lives lost and immeasurable damage to built and natural environments.

A harmonised multinational carbon-pricing instrument operates across most developed markets.

All but the hardest-to-abate modes of transport (such as aviation and long-haul freight and shipping) have been electrified. LCLFs, including sustainable aviation fuel, biodiesel, renewable diesel, and green hydrogen power the remainder.

A 'digital twin' of Earth drastically improves weather and climate forecasting and climate risk management.

Electricity grids across the developed world have been overhauled to support electrification, smart demand management, distributed storage, and the more volatile generation and usage dynamics of renewables.



Australia

Australia has benefitted from global climate action, which has prevented runaway temperature increases. However, the climate is still changing rapidly due to historical emissions and, as a significant landmass, the Australian mainland is experiencing higher temperature rises than the global mean. Inaction at all levels of government means Australia is not well-prepared to deal with these changes.

The Australian Government failed to prepare for the global move away from fossil fuels. This has hit our exports hard. Australia's reputation as a climate-action laggard means that many businesses prefer to buy from more proactive countries, while international carbon border adjustment mechanisms have reduced the price competitiveness of Australian products. Economic impacts have been somewhat mitigated by increasing global demand for critical minerals due to the rapid expansion of clean energy technologies. Overall, the result has been a steep decline in gross domestic product (GDP) and an unbalanced trade account, which threatens to lead the country into a recession and reduced living standards.

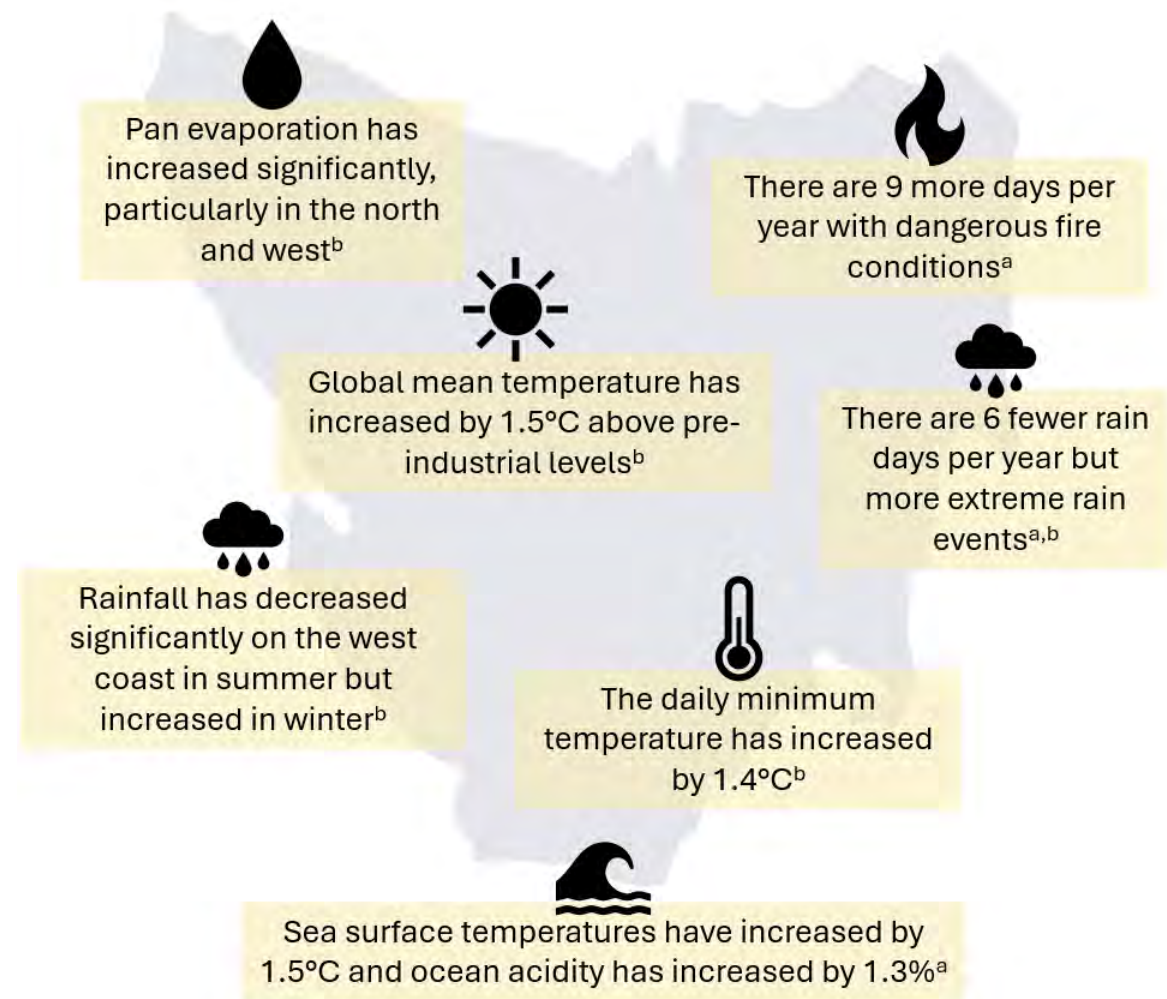
Australia's food system is under strain, which is exacerbated by a lack of government policy leadership and investment in climate-resilient agriculture. The types of crops grown in specific regions have changed: for example, due to drying conditions in south-west WA, dairy and livestock production is being shifted to cereal and legume cropping.⁷⁶ Outbreaks of new pests and disease are becoming more frequent and widespread due to the difficulties managing biosecurity, disrupting food production.

Insurance is becoming almost impossible to purchase for some industries and areas. Broad areas – including in forest-dense regions and areas likely to be impacted by one metre of sea-level rise – are no longer eligible for insurance due to a lack of fire preparedness and inadequate levees.

Moreover, even as the cost of renewable energy continues to fall, underinvestment and planning failures mean that a growing share of renewable generation cannot be seamlessly integrated into energy grids. Without adequate transmission, firming, storage, and demand management, industry and households are hit by increasingly frequent shortages, brownouts, and network failures. Households that can afford the cost have been shifting to off-grid systems using solar and batteries.

Societal divisions, already evident in 2030, have deepened, with growing economic stratification and growing homelessness rates, particularly due to climate-related displacements.

2050


 Tasmania


Tasmania is experiencing slightly milder temperature rises (than the global mean) due to the influence of the Southern Ocean.⁷⁷ However, decades of fragmented and reactive government policy mean that the effects of climate change in the State are worse than they could have been.

Extreme heatwaves have become more frequent, and there are nine additional days per year (compared to 2025) with dangerous fire conditions.⁷⁸

An emerging pattern sees increased rainfall over the northern east coast in autumn and spring, while northwestern and inland areas such as the Central Plateau have experienced a steady decrease across all seasons.⁷⁹ Some areas have seen as much as a 50% decline in rainfall in autumn and a 10-20% decline in spring, causing challenges for agricultural production, drinking water delivery, and hydroelectric power generation. Additionally, rainfall events have tended to become heavier, interspersed with longer dry periods, increasing runoff events and making river water treatment more difficult and energy intensive.⁸⁰

Wind speeds are higher in July through to October than they were in 2025, which causes significant damage to Tasmania's natural and built environments – particularly when coinciding with extratropical storms or periods of dry.⁸¹

There have been some attempts to build new wind and solar farms, but construction has been delayed due to increasing extreme weather events and supply chain-issues. Additionally, these projects are contributing to social divisions, with communities split over the trade-off between energy security and environmental impacts. The Marinus Link is underutilised in an increasingly constrained energy market. This comes at a cost to the Tasmanian, Victorian, and Commonwealth Governments but also to consumers who are charged more.

There are significant and sustained negative impacts to ecosystems and changes to ecological integrity.⁸² In some areas, these changes are proving irreversible. Bushfires have scarred the Tasmanian landscape, with iconic species such as the Huon Pine and Deciduous Beech fighting extinction.

It is many years since Tasmania lost its net-zero status, which has led to significant flow-on effects to the State economy. Tourism is down, our exports (such as wine and seafood) are no longer highly regarded for their 'clean, green' brand attributes, and sustainability-focused investors and businesses have abandoned the State. Despite the negative impacts to Tasmania's reputation, some businesses have been able to pivot and are still highly sought after internationally.

On the positive side, some forestry plantation species and agricultural crops (such as wine grapes) are becoming more productive with increased temperatures.⁸³

Many properties in east coast communities and low-lying suburbs near the Derwent and the Tamar Rivers are now uninsurable. Those who can afford to have relocated, leaving once-valuable waterfront properties derelict. Proactive investment in more resilient floodwalls or storm surge barriers could have prevented these problems decades ago, but it is now too late.

Health care systems and emergency services are under strain due to the higher temperatures and more frequent extreme weather events, which are associated with increased levels of injuries, fatalities, exacerbated chronic illness, poor mental health, high-risk alcohol consumption, and family violence.⁸⁴ Due to broader pressures within the Government's budget, hospital emergency departments are overcrowded and underfunded, with extended ramping and wait times during and after extreme weather events.

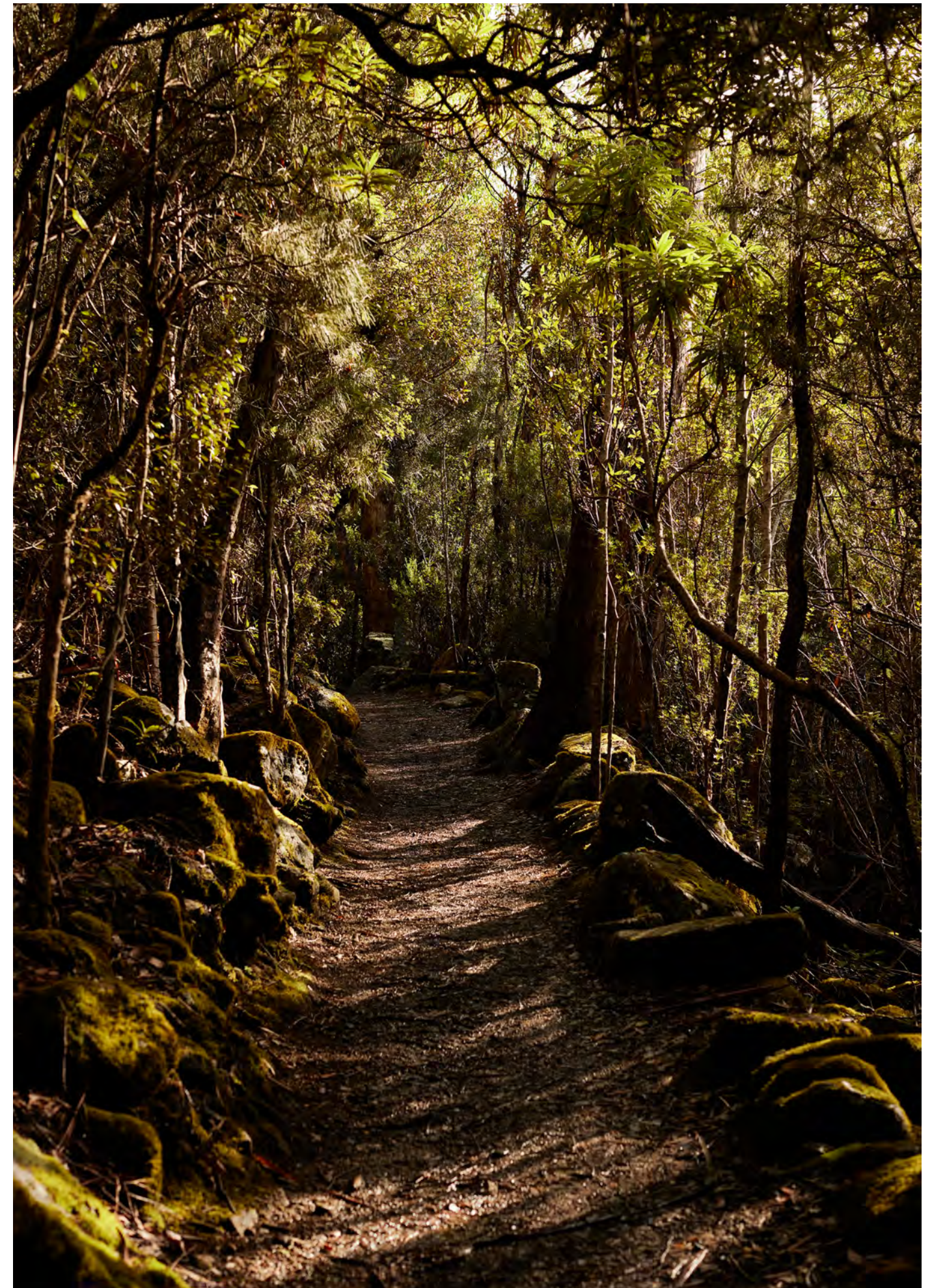
Communities are reeling from the constant barrage of extreme weather events. While at first the community banded together, there is now strong disaffection and anger. Most people understand that global climate action has kept temperatures down and prevented the worst from occurring, but blame the Tasmanian Government for its lack of preparedness and decisive action.

Despite these challenges, Tasmania is beginning to see an inward flux of migrants from mainland states – particularly Queensland – seeking to escape frequent extreme heat.

Extreme weather event: Storm surge in the southeast

A storm surge recently hit Lauderdale, Cremorne, and surrounds, inundating low-lying areas. A lack of strategic risk assessment and planning over the previous decade meant that many people were still living in highly vulnerable properties. There was little preventive infrastructure in place to help limit the damage.

There was serious structural damage to around 40 houses. Because many people did not have insurance, several families became temporarily homeless. The canal between Ralphs Bay and Fredrick Henry Bay broke through, leaving South Arm inaccessible by road. Several powerlines went down. The response effort was disorganised due to fragmented emergency planning and limited funds. In the aftermath, some septic tanks overflowed, and cleanup activities had to contend with contaminated water. Several people were hospitalised with gastrointestinal illnesses. The cleanup was slowed by the lack of road access, and services could not be restored to affected areas for several weeks. The community remains in limbo as people try to decide whether to rebuild or relocate – and some cannot afford to do either.



2050 Sector Impacts

	Financial Capital • Due to the constrained fiscal environment, GREs are encouraged to provide high dividends to the Government. • Limited Government support for prioritising climate-resilient infrastructure over the past decades means that GRE maintenance and repair costs are increasing. • The challenges facing the NEM mean that there is some demand for Tasmania's electricity, creating revenue generation opportunities.
	Intellectual Capital • A lack of Government leadership means that GREs are falling behind in integrating new technologies into their operations. • Most GREs struggle to access accurate forecasting and new technologies for remote maintenance and monitoring. • GREs have lost significant amounts of valuable institutional knowledge because of high staff turnover driven by an increasingly unsatisfying – and for some, dangerous – work environment.
	Manufactured Capital • Extreme weather events continue to disrupt supply chains, causing delays to critical maintenance works due to the unavailability of vital materials. • The increasingly challenging climate requires more regular infrastructure maintenance, renewal, and restoration. • Lack of Government support makes it expensive to build climate-resilient infrastructure.
	Social and Relationship Capital • GREs' social license is deteriorating. Customers are frustrated by the increasing frequency of service outages caused by damage from extreme weather events, which is exacerbated by outmoded and poorly maintained infrastructure. • Limited Government support makes coordination across GREs and other organisations challenging.
	Human Capital • There is a shortage of skilled local workers, but this is somewhat offset by skilled migrants from hotter parts of Australia. • The increase in heatwaves and extreme weather events means that there are more days when outdoor work cannot be conducted; it also means that employees are working from home more often and taking more frequent sick and stress leave. • Many GRE employees feel increasingly disillusioned with the lack of Government climate action and suffer from community anger over service disruptions.
	Natural Capital • Limited Government action to protect land and sea ecosystems results in significant biodiversity loss. • Higher average temperatures have improved growing conditions for some crops and plantation species, but others are negatively affected by changing rainfall patterns, diseases, and pest species. • Businesses and research organisations have done their best to fund adaptation R&D but are unable to fill the gap left by limited public spending. • Natural resources need to be carefully managed due to inconsistent rainfall, the increased threat of bushfires, and competing GRE needs.

2090



Global

Global warming continues to be limited to 1.5°C. Most developed countries have committed to the long and expensive process of recapturing a responsible portion of their historic emissions to return the Earth's climate to a safe and stable condition. As a result of these efforts, the planet has recently achieved net-negative emissions status – but some of the damage is irreparable.

The distributional consequences of climate action, and the disproportionate impact felt by low-income countries, are being redressed by a Global Resilience and Adaptation Fund. The Fund provides reparations and adaptation support to less-developed countries devastated by climate change.

It is widely acknowledged how much worse the situation could have been without global action. But the environmental impacts remain difficult to navigate for many. Bushfire seasons rage hotter than before, with many countries experiencing extreme fires and floods every year.

The world no longer relies on fossil fuels, and an abundance of cheap renewable electricity supports productivity growth and wellbeing in many countries.



Australia

Temperatures have remained stable. Global action to keep warming to 1.5°C has spared Australia the worst consequences of a warmer planet. However, weather patterns have still changed greatly since the start of the century – and the Australian Government's limited policy leadership means the country is struggling to cope.

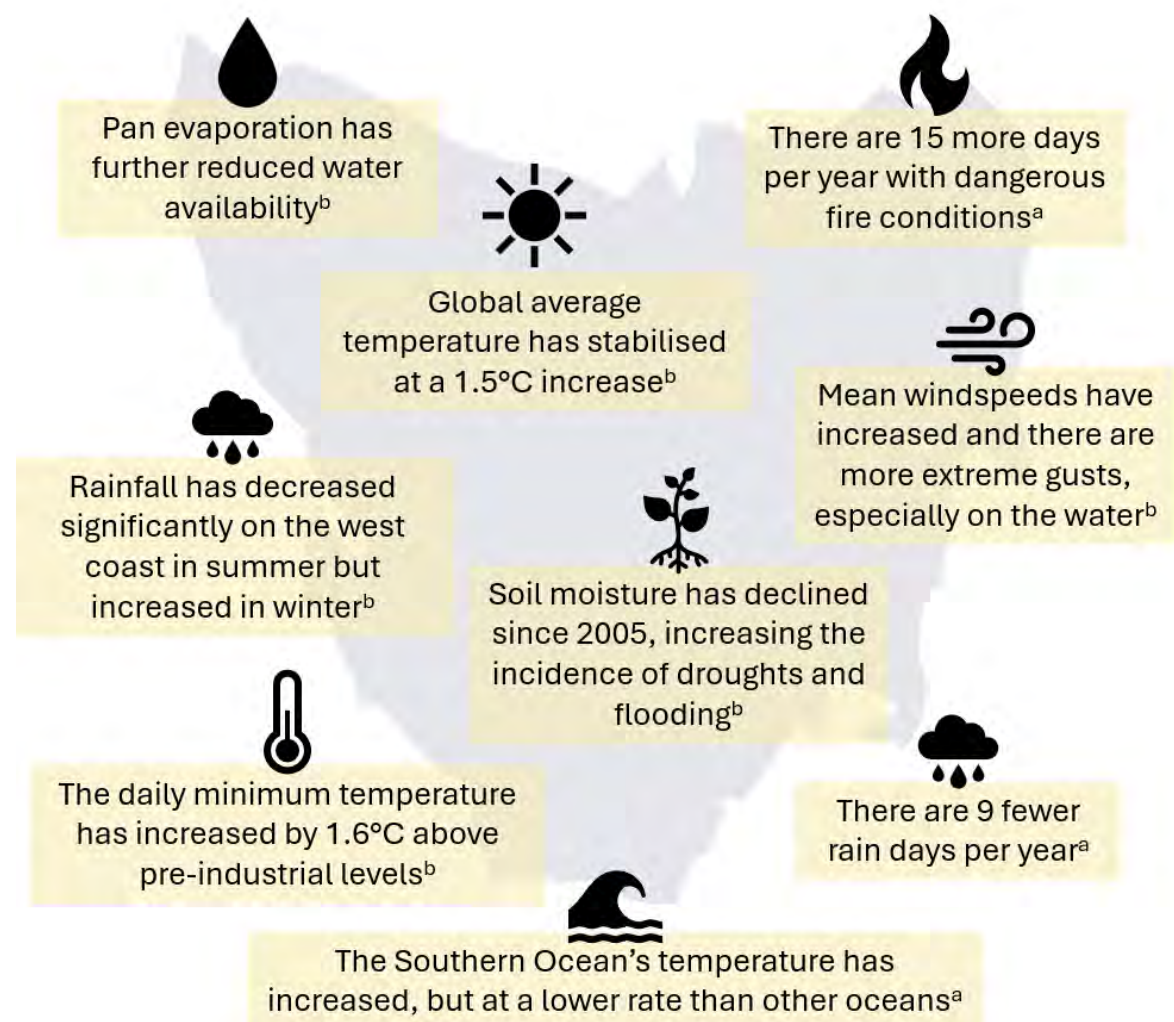
Government disaster preparedness and adaptation planning is fragmented and ad hoc, with political inertia, financial restrictions, and community scepticism and division exacerbating challenges. Because of this, extreme weather events kill many people and damage key infrastructure. The energy market has been particularly hard hit, with parts of the country experiencing black- or brown-outs frequently. As a result, households and businesses that can afford to have moved off grid; those that cannot afford to do so are left with unreliable energy systems.

The economic burden of climate change is staggering. Responding to natural disasters, extreme heat days, and infrastructure damage now consumes two to three times the share of GDP it did in 2025 – further increasing the Government's massive debt. There is little money left for public services, and their availability and quality are decreasing more with every passing year. Many individuals go without vital treatment in a struggling and overcommitted health system, leading to high mortality rates for treatable disease.

The country's economic woes are compounded by falling exports, exacerbated by the disorderly, fragmented transition to a renewable energy system. Many Australian products and resources are no longer competitive in the international market due to punishing climate tariffs and carbon border adjustment mechanisms imposed by our former key trading partners.

The social impacts are equally severe. Increased insurance costs mean that many people are unable to rebuild after extreme weather events, contributing to a seemingly exponential and irreversible housing shortage. The population of internally displaced climate refugees is housed in a growing number of semi-permanent camps scattered around the country, with ongoing arguments among all levels of government about who should take responsibility for these people.

2090


 Tasmania


Warming levels have remained relatively stable since 2050, with Tasmania continuing to experience a lower temperature rise than the global mean and the Australian mainland.⁸⁵ Although extreme weather events do still occur, their frequency and severity have stabilised since the middle of the century. However, the Tasmanian Government's limited forward planning, particularly in the areas of adaptation and resilience, means that the impacts on Tasmania's environment, society, and economy are worse than they could have been.

The State experiences heavy rainfalls regularly. Paired with drying soils, this means that flash flooding occurs much more often, and landslips damage important infrastructure. These floods cause widespread loss of life and the destruction of houses. They also have devastating effects on infrastructure: dams are more difficult and expensive to maintain; communication infrastructure and transport networks are often damaged; drinking water sources are sometimes contaminated; and stormwater and sewage systems frequently overflow. The floods have also had a major negative impact on plantations in the northwest and on the West Coast, with many trees dying due to a lack of nutrients from water-logged soils.⁸⁶

Notwithstanding contamination incidents, water availability in Tasmania is better than other Australian jurisdictions. Usage restrictions are in place for several months each year, but some new dams and recycled water facilities are under construction and may help to ease the pressure in future.

Changes in rainfall cause difficulties for electricity production and storage. Investment in renewables has long been well behind other countries, meaning Tasmania is only just seeing large-scale solar and wind farms come online to help meet demand. Global action has meant that renewable technologies are more affordable than in the 2030s, so private investors are beginning to enter the market to capitalise on electricity shortages and rising power prices.

The State's population is decreasing. Many Tasmanians – particularly young people – are leaving for jurisdictions with a more proactive approach to climate policy, such as New Zealand. However, this is somewhat offset by Tasmania's relatively benign climate attracting domestic migrants who can afford to leave the hotter areas, such as the Northern Territory and Queensland.

It is difficult for Tasmanian farmers to produce enough food for the State due to the combination of extreme weather events, increased weed prevalence, new pests and diseases that thrive in the warmer climate, and the degradation of arable land. Consequently, the price of locally grown fresh produce has soared. This has negatively impacted health outcomes as people who cannot afford imported fresh produce become ever more reliant on cheaper processed foods.

Sea-level rise is approaching half a metre, and east coast water temperatures have risen by 2-3°C.⁸⁷ More than 25% of the Tasmanian coastline has suffered from inundation and erosion, with storm surges becoming more frequent. In the absence of Government support, many communities forced to relocate have not yet recovered – financially or socially.

Many marine and terrestrial species are extinct in the wild.⁸⁸ Invasive pest species dominate in their place. Precious and much-loved ecosystems are severely degraded, and others have collapsed due to changed seasonality of rainfall, hotter temperatures, and the increased range and intensity of bushfires.⁸⁹

Extreme weather event: Launceston flood

Recently, a compound estuarine flood occurred in Launceston. This was caused by a combination of elevated water levels in the Kanamaluka/Tamar Estuary (due to storm tides) and simultaneous flooding of the North and South Esk Rivers.⁹⁰ The effects of the flood were exacerbated by limited disaster risk reduction and preparedness efforts over the previous decades: repeated inundations had increased erosion and damaged preventive infrastructure such as levees.

The flood exceeded all previous records, with large areas of central Launceston submerged under as much as one metre of water. The lack of adequate early warning systems contributed to the loss of around 20 lives, and hundreds of homes suffered structural damage. Landslides dislodged boulders and other debris, causing severe structural damage to hundreds of Launceston's buildings. Bridges, roads, and other critical infrastructure (such as power lines and phone towers) were also ravaged. Damage to sewerage and drinking water infrastructure resulted in environmental degradation and treated water shortages for several weeks after the event.

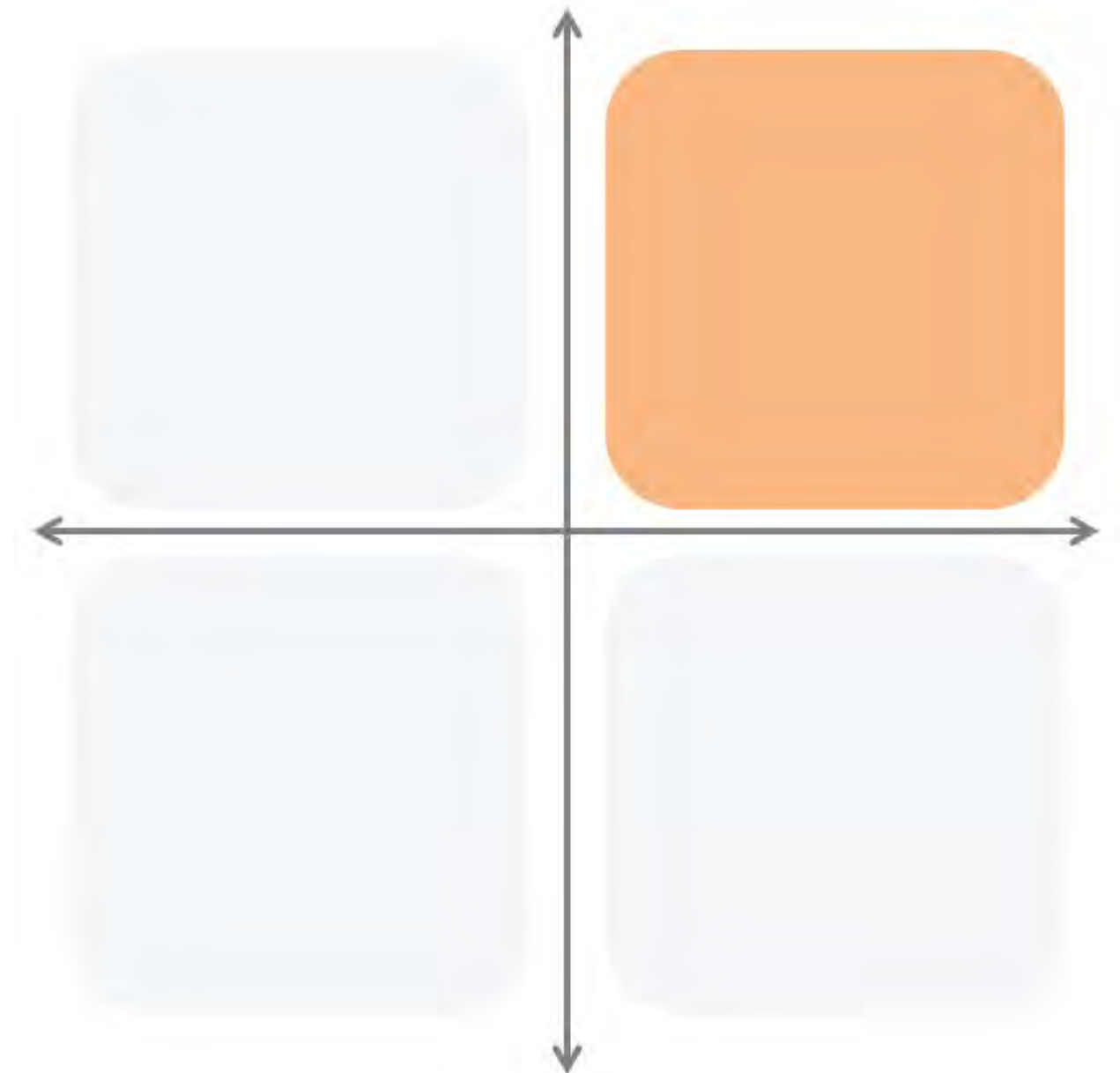
The emergency response was disorganised due to fragmented planning and damaged communication networks. The ongoing recovery process has been characterised by a bitter blame game between state and local government. There are limited public funds available for reconstruction, and the many uninsured residents and business owners cannot afford to rebuild. They are unsure what to do next.



2090 Sector Impacts

	Financial Capital • The Government’s fiscal situation is dire, encouraging it to squeeze the highest possible dividends from GREs. • GRE costs are extremely high, largely due to infrastructure damage caused by the more challenging climate. • Tasmania’s diminishing population has reduced the customer base for some GREs, meaning that unavoidable fixed costs consume an ever-increasing share of declining revenue.
	Intellectual Capital • Dealing with day-to-day emergencies means that GREs cannot put time and resources into maintaining and refining their systems and processes.
	Manufactured Capital • Extreme weather events continue to disrupt supply chains, causing delays to critical maintenance works due to the unavailability of vital materials. • The State’s ageing infrastructure still struggles to cope following years of under-investment in climate resilience.
	Social and Relationship Capital • GREs’ social license is in tatters. Customers are angry about rising costs and frequent, prolonged service disruptions that have negative flow-on effects for business, food distribution and health services. • Bitter public arguments about responsibility for crumbling infrastructure and service outages are common among GREs and with the Government.
	Human Capital • There is a severe shortage of skilled local workers, but this is somewhat offset by skilled migrants from hotter parts of Australia. • There are many days on which it is too dangerous to conduct the outdoor work necessary to maintain critical services; even when outdoor work can go ahead, it is very challenging due to heatwaves, extreme weather events, and neglected infrastructure. • Employees work from home wherever possible to minimise time outside in challenging weather conditions, and many are disillusioned and worn down by community anger over service disruptions.
	Natural Capital • Due to compounding negative impacts from climate change and decades of poor environmental management, the State’s land and sea ecosystems have severely deteriorated. Some have entirely collapsed. • Water has become more expensive, with rationing occurring several times a year. • Much of Tasmania’s arable land has been severely degraded.

Scenario 3: Adapting Together



2030



Global

The global mean temperature has risen by 1.5°C compared to pre-industrial levels. This has increased the frequency and severity of extreme weather events, including flooding and fires, across the world.

Some countries are meeting their emissions reduction pledges, but many are hesitating to take further and more ambitious action. After a damaging blame game among world leaders, the future of the annual international climate action conference, the Council of Parties (COP), is uncertain.

National leaders are concerned about the 'free-rider' problem – other countries not playing their part in emissions reduction – and have begun shifting investment into climate adaptation. In more well-resourced societies, climate-conscious lifestyle changes – such as plant-based diets and low-carbon travel – are becoming more mainstream.

Renewable energy technologies – including solar and wind generation and battery storage – are continuing to become cheaper, with many businesses and industries developing new and innovative production processes.

Rising temperatures are contributing to the spread of tropical diseases such as dengue fever and malaria.⁹¹



Australia

Australia is emerging as a world leader in climate action and has been a strong advocate for further global emissions reduction agreements. This has helped to improve relationships with Pacific countries, which appreciate Australia's efforts towards decarbonisation.

Mainland Australia is warming faster than the global mean temperature, with inland areas heating more rapidly than coastal areas.⁹² Rainfall is beginning to noticeably decrease in the southern areas of WA and in SA, resulting in more time spent in drought. Combined with higher temperatures, this is leading to more devastating bushfires, especially in the southern and eastern parts of Australia.⁹³ Due to declining water availability, governments have begun constructing desalination plants to satisfy community needs.

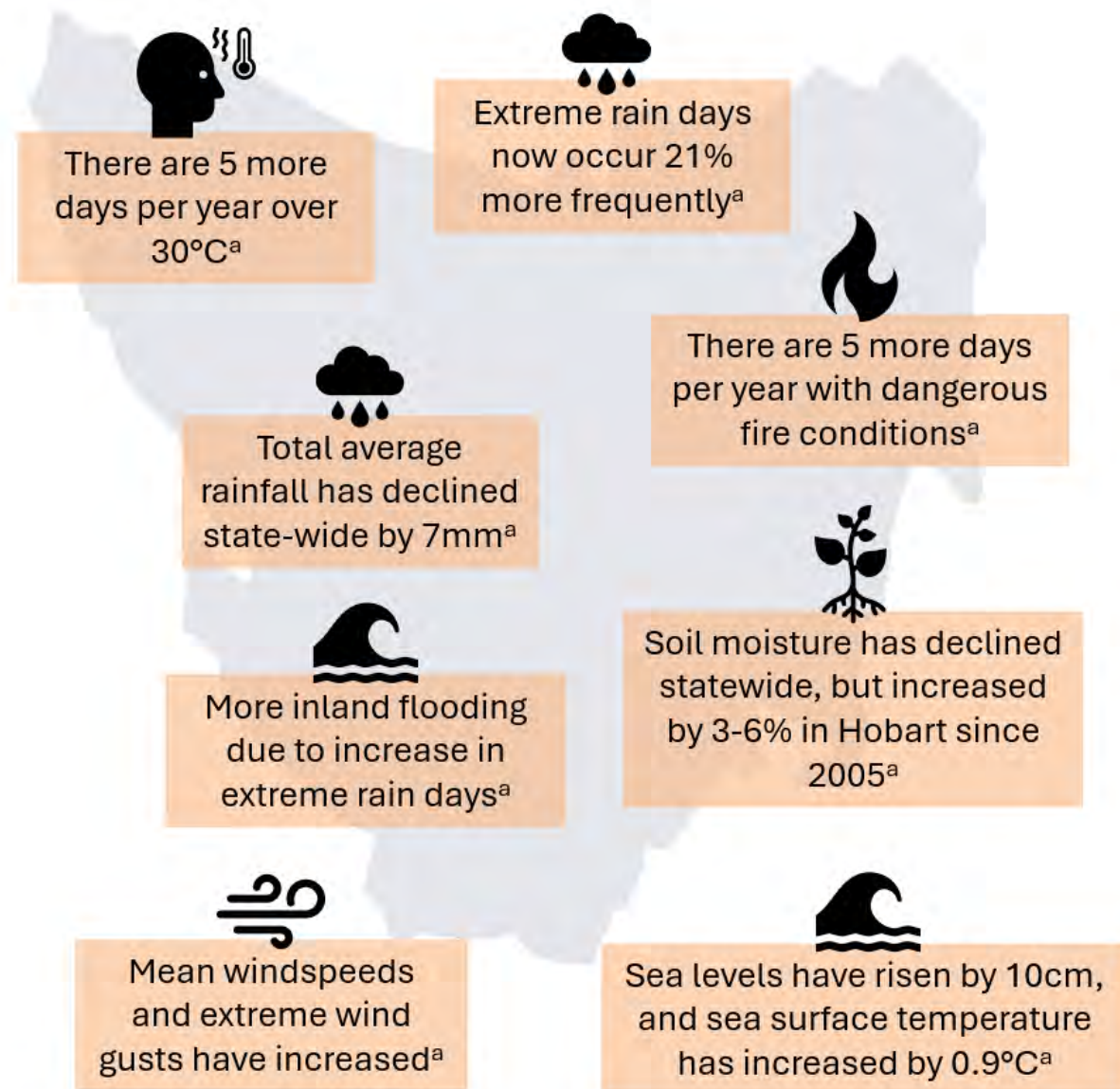
Extreme weather events such as flooding, storm surges, and cyclones are becoming more frequent and severe. Because of this, many Australian families and businesses struggle to get insurance, particularly in 'high risk' coastal and forest areas. Where insurance is available, the premiums are becoming unaffordable for many, and insurance companies are beginning to exclude 'climate-change related extreme events' from their policies. Governments are helping to hedge risk via publicly supported reinsurance pools and investments in resilience.

The increase in disasters is continuing to affect supply chains within Australia. Flooding and bushfires have meant that some critical chemicals, medical and food supplies, and some perishable goods are not always available when and where they are needed.

Australia is well on its way to reaching net zero by 2050. The Australian Government has legislated against all new fossil-fuel projects and is rapidly shutting down existing ones. With the understanding that the world is heading towards more than 3°C of warming by 2100, the Government has also begun ramping up adaptation efforts. To prepare for this, it is supporting climate-related transition planning across the economy and community, developing disaster resilience funds and requiring climate risks be considered in all aspects of operations, such as built environment planning and development. This includes the development of environment levies on domestic fossil fuel extraction and pollution, which has been used to establish a climate resilience fund.⁹⁴

Widespread agreement that climate action is essential helps to build social cohesion, but intergenerational tensions over historic climate inaction continue to fester.

2030


Tasmania


Although Tasmania is less severely impacted than the Australian mainland, climate change is already causing significant disruptions. There is an increase in severe weather events, heatwaves, and habitat loss. However, some negative impacts are mitigated by ambitious climate action.

Summer heatwaves arrive earlier and last longer. In some areas, residents endure three or four more high-heat days each year than in 2025. Each heatwave day contributes to as much as a 9% increase in all-cause mortality, with older and vulnerable Tasmanians most affected. The Tasmanian Government's subsidy program for energy-efficient air-conditioning systems has helped limit the number of heat-related deaths.

The changing climate is already impacting the State's land and sea ecosystems. Alpine areas are drying out, and bushfires have destroyed stands of Pencil Pine and Deciduous Beech. Several endemic plant and animal species are on the edge of extinction. Pest infestations, disease outbreaks, and algal blooms are increasingly common.

There is a moderate increase in the frequency and severity of extreme weather events. Effective government policy leadership on climate resilience and disaster risk reduction limits the negative impacts on Tasmania's society and economy, but this comes with significant up-front costs.

The Government continues to face fiscal challenges, with net debt expected to continue growing for at least five more years. However, a reputation for renewable energy and green industry has boosted Tasmania's international credentials, helping to attract investment.

Most of the commitments made in the sectoral ERRPs have been met. New, more ambitious ERRPs have begun to deliver absolute emissions reductions, meaning that Tasmania's net-zero status is no longer so heavily dependent on carbon emissions removals by our forest estate.

The State has exceeded the Tasmanian Renewable Energy Target (TRET) of generating 15,750 GWh of clean electricity in 2030 and is able to sell larger volumes of green power to the mainland. The Tasmanian Government has put in place a requirement for profits beyond a certain threshold to be distributed to consumers in the form of bill rebates. This means that revenue generated by energy exports is beginning to improve affordability for Tasmanian households.

On-island green hydrogen and LCLF production is helping to support industrial decarbonisation for hard-to-abate industries, as well as providing jobs and other co-benefits in regional communities.

Government investment in research, monitoring, and strategic planning is high. Projects include ongoing environment protection and restoration efforts. Adaptation policies such as managed-retreat flood risk rezoning, major infrastructure retrofits and upgrades, and cutting-edge passive design standards for new buildings are also a focus. The Government is focusing efforts on the prevention of species extinction and the protection of ecosystem services. As such, the Government has helped to strengthen the ANRM which is now mandatory.

Widespread agreement that climate action is essential helps to build social cohesion, but intergenerational tensions over historic climate inaction continue to fester.

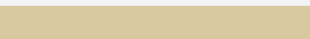
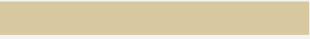
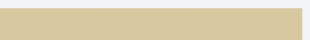
**Extreme weather event:
Kunanyi/Mount Wellington bushfire**

Despite significant preparation and planning, areas of Kunanyi/Mount Wellington have been ravaged by a recent bushfire. Triggered by dry lightning, the fire rapidly spread due to a combination of high temperatures, high winds, and low soil moisture.⁹⁵ Three lives were lost and 11 people were severely injured. Ember attacks caused the destruction of 150 houses across Glenorchy, Mount Stuart, and West Hobart. There was significant infrastructure damage, with major transmission lines downed in the hills above Glenorchy. Water catchments were contaminated but forward planning meant that it was possible to turn to alternative water supplies. Smoke from the bushfire caused high levels of respiratory attacks requiring hospitalisation.

As bad as the impacts were, it is widely recognised that strategic planning, readiness actions, and rapid responses from emergency services prevented greater losses. Thanks to proactive backburning and regular maintenance of key fire trails, emergency responders were able to travel quickly and prevent some of the worst damage.



2030 Sector Impacts

	Financial Capital • Despite a challenging fiscal environment, the Government and GREs work together to manage expectations around dividends. • GREs experience rising costs, largely due to infrastructure damage caused by an increasingly challenging climate. • With Government support, GREs are ramping up investment in their climate resilience. This comes with substantial up-front costs. • Clean electricity sales to the mainland boost revenues, and a climbing Australian Carbon Credit Unit (ACCU) price increases the profitability of Tasmania's plantation forests.
	Intellectual Capital • Strong Government leadership means that climate-related R&D is thriving. • GREs are required to revise some of their systems and processes to cope with an increase in extreme weather events, resulting in the implementation of world's-best practice systems and processes as part of their adaptation strategies. • Some GREs benefit from opportunities to develop intellectual property (IP) related to managing climate impacts.
	Manufactured Capital • The frequency and severity of extreme weather events cause some supply-chain and infrastructure-related disruptions and creates challenges for GREs that manage large and complex infrastructure portfolios. • More regular infrastructure maintenance, renewal, and restoration is required because of the increasingly challenging climate impacts. • Government regulations mean that new infrastructure must adhere to strict climate-resilience standards.
	Social and Relationship Capital • GREs' social license is maintained despite some service disruptions and increased cost of services. • Sufficient resources mean that GREs are not forced into competition and continue to work cooperatively.
	Human Capital • Workforces are under pressure to do more with less in the face of budget constraints and growing maintenance costs, which causes mental health challenges for some employees. • There are growing physical and mental health risks for staff working outdoors due to rising temperatures and more frequent and severe extreme weather events. Recognising this, the Government introduces more rigorous work health and safety regulations. • GREs benefit from more proactive government investment in developing a skilled domestic workforce, including innovative approaches to reforming education and training.
	Natural Capital • Rising temperatures and the increased frequency and severity of extreme weather events are beginning to change the State's land and sea ecosystems. • The Government is supporting research and development (R&D) and strengthening policies to prevent species extinction and protect ecosystem services, consistent with the now-mandatory national Nature Repair Market. It is also ramping up its biosecurity protections.

2050



Global

The planet is warming every year, with the mean temperature having risen by 2.1°C. Many parts of the world now face heatwaves between two and five times more frequently than in the early 21st century.⁹⁶ In some regions, heavy rainfall events that used to happen once a decade now occur every two to three years.⁹⁷

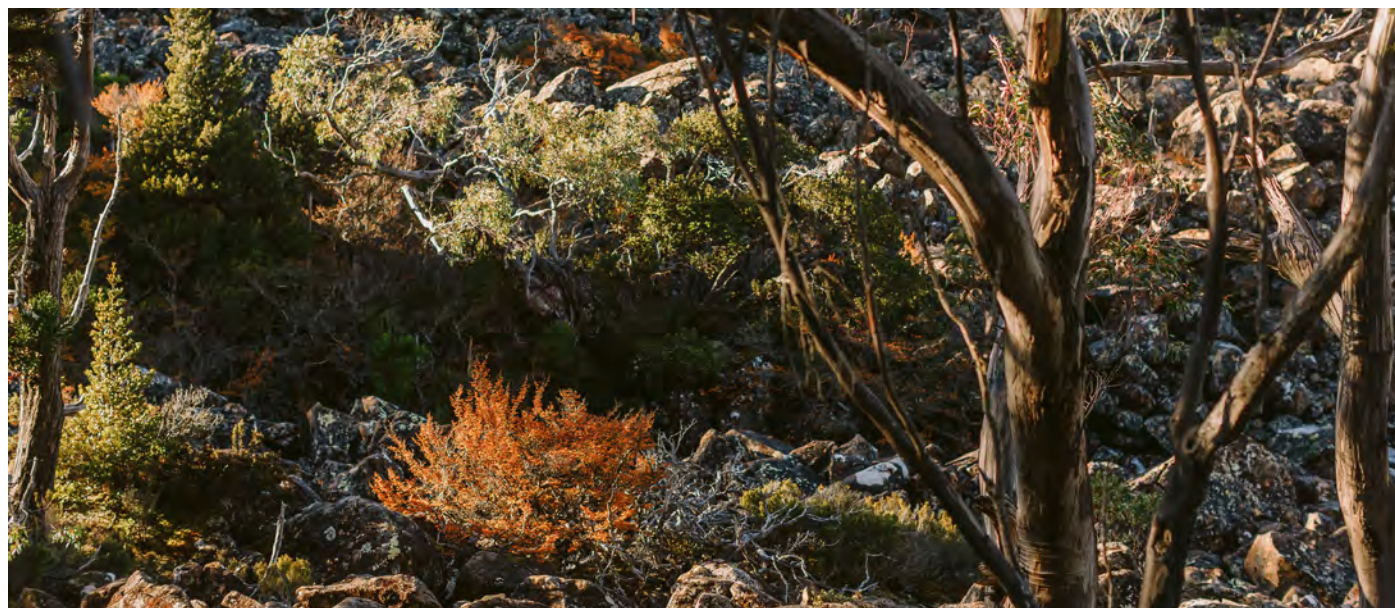
Large urban slums in developing countries are becoming climate-devastation hotspots: flooding, heat, disease, and displacement create chronic humanitarian challenges. The number of climate refugees has increased significantly due to loss of livelihoods in vulnerable regions.

Trust in global and national institutions is being eroded by their clear failure to address the climate crisis. Inequality has deepened as rich countries and communities that can afford to adapt do so, while poorer countries and communities bear the brunt.

Collective and coordinated climate action between countries has all but disappeared and annual COP meetings are a distant memory. Countries have turned their focus inwards and geo-political tensions are high as resources become scarcer and more expensive.

A failure to prepare ahead of time means that responses to climate disasters are chaotic, reactive, and expensive. Emergency sea walls, mobile cooling shelters and even last-ditch geo-engineering experiments are commonplace, but they cost much more and achieve much less than earlier strategic and coordinated planning would have done.

Across the world, vital biodiversity is being lost due to increasing temperatures and limited international environmental protection efforts. Many species of flora and fauna that could not adapt have become extinct, while others are severely threatened.



Australia

Australia is managing the heating world better than most thanks to resilience and adaptation measures taken by proactive federal and state governments over previous decades. Many of these initiatives have been supported by the climate resilience fund that was established using levies on domestic fossil fuel extraction.

Average temperatures in some inland regions of Australia now regularly exceed 40°C in summer, while southern coastal cities experience more frequent and intense heatwaves. In New South Wales (NSW), Victoria, and southern Queensland, there are roughly 40-50% more 'very high fire danger' days than there were in 2000.⁹⁸

Bushfires, floods, and storms are more frequent and severe, but our climate-ready infrastructure shields communities and assets from the worst impacts. New regulatory standards for climate-resilient infrastructure and utility services help to reduce damage, although some areas still experience devastating disasters. Energy-efficient, medium-density housing supply has increased due to coordinated urban planning, building code reforms, and public infrastructure investment. Increased tree cover reduces the urban 'heat island' effect in cities.*

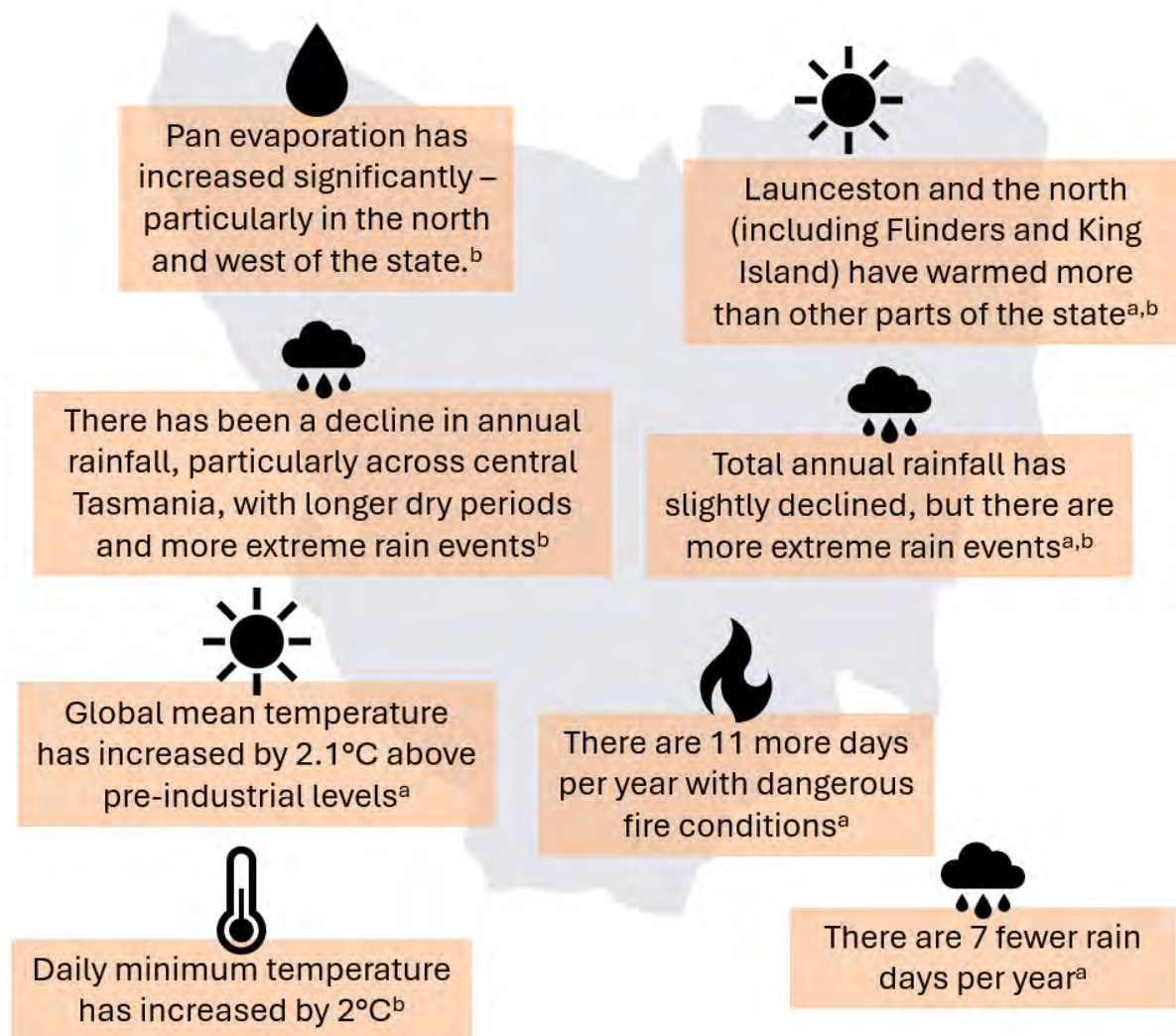
More intense high rainfall events and longer dry spells lead to more frequent crop failures, but extensive government-funded research into the development of more resilient, drought-tolerant varieties helps farmers to adapt with minimal disruption.

A combination of managed retreat from high-risk coastal areas, wetland restoration, and upgraded seawalls and levees has reduced exposure to flooding and coastal inundation events compared to the NCRA projections. Government support was vital in helping communities and valuable infrastructure assets relocate in a timely manner. Due to Australia's relative prosperity and safety, net overseas migration continues to increase. Australia welcomes those it can, but social tensions grow as people worry about resource scarcity and over-crowding.

Supply-chain disruptions caused by extreme weather and trade tensions are reduced by the Government's leadership on circular-economy practices. Distributed energy storage, virtual power plants, smart demand management, and grid infrastructure upgrades have helped Australia manage a rapid reorientation of its energy system towards renewables without major disruption. However, energy prices remain high due to soaring network costs associated with a rapid and expensive transition.

*The urban 'heat island' effect is where a city experiences much warmer temperatures than nearby rural or natural areas due to the different way the surfaces absorb and hold heat. Many building surfaces are impervious – that is, cooling water particles cannot penetrate like they can do in natural, permeable surfaces, thereby cooling them down. Instead, many building surfaces absorb the heat and store it. See, for example, <https://science.nasa.gov/kids/earth/what-is-an-urban-heat-island/>. Researchers found that temperatures in central Adelaide can be as much as 7 degrees higher than in surrounding areas: Soltani A & Sharifi E (2017), Daily variation of urban heat island effect and its correlation to urban greenery: a case study of Adelaide. *Frontiers of Architectural Research* 6(4):529–538.

2050


Tasmania


Temperatures in Tasmania have risen considerably, surpassing critical thresholds for avoiding the most severe impacts. In Hobart and Launceston, the number of days over 30°C has roughly doubled since the start of the century. The highest temperature days are up to 8°C hotter than in 2015, with the northwest, northeast and the Bass Strait Islands suffering the most. Despite Tasmanian Government efforts to protect Tasmania's ecosystems, the global scale of the climate emergency means that many flora and fauna species (including Pencil Pine and Deciduous Beech) are extinct. There are no Giant Kelp forests left in Tasmanian waters.

Higher temperatures, longer dry spells, increased dry lightning, and other changes mean that Tasmania's fire season is longer and more dangerous. The number of 'very high fire danger' days has increased by 40% since 2015, and the average land area at high risk of bushfire in spring has increased by 80%.⁹⁹

Each year, some areas are enduring extended droughts and others more extreme rain days.¹⁰⁰ These changing rainfall patterns have caused Tasmanians to adapt how they use water. Careful Tasmanian Government planning and modelling have enabled effective preparation for drought events – rainwater is efficiently captured, and the public has embraced the use of purified recycled water for drinking. Recreational water users still enjoy many of our rivers over the spring, but the more intense summer heat makes strenuous outdoor activities challenging.

Soil moisture content has reduced across all areas of Tasmania, with declines up to 13% in Launceston and the northwest.¹⁰¹ This has negative impacts on native vegetation and forestry – low soil moisture contributes to less flow into streams and rivers. It has also impacted agriculture, with much farmland becoming unsuitable for traditional crops. Where possible, the Government has supported farmers to plant crops better suited to the new climate and implemented smart irrigation techniques. On the positive side, some forestry plantation species and agricultural crops (such as wine grapes) are becoming more productive with increased temperatures.¹⁰²

Tasmania has maintained its net-zero emissions status through strong action and whole-of-government coordination. The State's fiscal situation has stabilised thanks to earlier investment in education and training, electricity sales to the mainland, and increasing private investment attracted by Tasmania's reputation for climate leadership.

Global and domestic supply chain breakdowns have impacted food security and access to other materials and products. However, effective planning and preparation during previous decades has ensured that more critical resources and materials are made locally. Circular economy principles support domestic resource self-sufficiency to a great extent.

Tasmania's renewable energy capacity has grown. Dozens of new generation projects have come online since the completion of Marinus Link Stage 2. These projects are carefully monitored and assessed to limit negative impacts on flora and fauna. Solar and wind farms are well-integrated with other land uses such as grazing, cropping, and plantation forests. They have also reinvigorated some of the State's regional and remote communities by providing additional jobs, training opportunities, and investment in local infrastructure and services. Plentiful, accessible renewable energy also supports green hydrogen and LCLF production, ensuring a secure domestic supply.

In the 2030s and 2040s, Tasmanians had increased their use of active and public transport to help reduce emissions. However, rising temperatures have forced those who can work from home to do so as much as possible to avoid commuting. For the outdoor labour force, heatwaves and extreme weather events mean that there are many days on which they are unable to work.

Tasmania is seen as a desirable refuge from a world that is suffering badly from climate change. Many mainland Australians – including skilled migrants – are moving to the State. The Government has had to carefully develop a sustainable and fair migration policy that balances the interests of Tasmanians.

Storm surge events that would have been considered ‘once-in-a-century’ in 2025 are now five times more frequent.¹⁰³ However, strategic planning and investment (by all levels of government, GREs, and private enterprise) in previous decades means that the State’s infrastructure has been incrementally replaced to meet national climate-resilience standards. Preventative infrastructure (such as flood levees and nature-based solutions) is paying dividends, but many areas – including Hobart – struggle to manage significantly more coastal flood days per year caused by sea-level rise and more frequent and extreme rain events.



Extreme weather event: Storm surge in the southeast

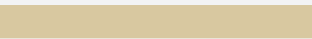
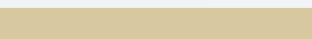
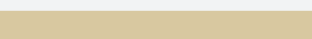


A storm surge recently hit Lauderdale, Cremorne, and surrounds, inundating low-lying areas. Strategic risk assessment and planning had ensured that people relocated away from the most vulnerable properties over the previous decade. State-of-the-art weather forecasting and an effective emergency warning system enabled early evacuation, likely saving many lives. Preventive measures such as seawalls helped to reduce the damage, but the combination of sea-level rise and powerful waves meant the destruction was widespread.

Powerful storm surges killed several people as they attempted to protect their properties. Around 40 houses were structurally damaged, and erosion undermined the structural integrity of several more. Many households were un- or under-insured, creating a large financial burden for residents.

In the aftermath, some septic tanks overflowed, and cleanup activities had to contend with contaminated water. Overall, good coordination and planning meant that the cleanup was efficient, but the scale of the disaster meant that it took several weeks for services to be restored to affected areas.

2050 Sector Impacts

	Financial Capital • GRE costs are higher than earlier in the century because of climate change impacts, including extreme weather events and the breakdown in supply chains. • Proactive investments in climate-resilient infrastructure have moderated maintenance costs, but these are still taking up an increasing share of GRE budgets. • Revenue from clean electricity sales to the mainland has peaked because new generation and increased storage capacity have reduced other states' reliance on Tasmanian green energy.¹⁰⁴ • Some GREs are benefiting from revenue generation opportunities including the increased productivity of Tasmania's plantation forests and the growth of new green industries such as LCLFs.
	Intellectual Capital • GREs continue to update systems and processes to cope with the changing climate. • Some GREs are benefiting from having developed IP related to managing climate impacts, including innovative ways of undertaking infrastructure maintenance and upgrades. • New technologies (including AI, LiDAR, and enhanced data processing) and climate modelling contribute to more efficient and effective GRE operations.
	Manufactured Capital • Supply chain disruptions have forced the development of local solutions supported by domestic manufacturing capability and circular economy principles. • The increasingly volatile climate means that infrastructure requires constant maintenance and repair, although earlier investments in climate resilience have helped mitigate the worst impacts.
	Social and Relationship Capital • GREs' social license is maintained despite extended service interruptions, because the public understands that these are largely due to external factors. • Resource constraints increase tensions among GREs, and between GREs and other businesses. At times, the Government steps in to mediate.
	Human Capital • The combination of a highly skilled local workforce and skilled migrants means that GREs can meet their workforce needs. • The increase in heatwaves and extreme weather events means that there are more days when outdoor work cannot be conducted; it also means that employees are working from home more often and taking more frequent sick and stress leave. • Climate-resilient infrastructure, strategic planning, and new remote maintenance technologies reduce the need for some outdoor work.
	Natural Capital • The State's land and sea ecosystems are deteriorating due to the changing climate, with unprecedented species extinction. • The Government's earlier policy interventions and investments in R&D are supporting effective environmental management and biosecurity measures, but the negative impacts of rapid climate change are overwhelming in many cases. • Changing rainfall patterns, declining soil moisture, diseases, and pest species are negatively impacting many crops and plantation species, although some are benefitting from higher temperatures. • Water is being even more carefully managed due to increasingly inconsistent rainfall. • These problems have cascading effects being felt throughout the Tasmanian economy and society.

2090



Global

The global mean temperature has increased by 3.6°C compared to pre-industrial levels. Ecosystems have suffered cascading failures: forests and coral reefs have been destroyed; watersheds are degraded; and biodiversity losses are profound. Food insecurity is endemic, driven by widespread deforestation, soil erosion, and agriculture that never fully transitioned to climate-smart practices. Chronic drought, contamination, and mismanagement have made safe drinking water a rare commodity. Public health is burdened by malnutrition, heat stress, and water-borne disease.

Globalisation and intergovernmental cooperation are distant memories. International governance is in tatters, as most countries prioritise self-reliance over cooperation. Many countries are still reliant on fossil fuels. Resource conflicts – particularly over water and arable land – fuel frequent internal skirmishes and cross-border tensions. Developing countries suffer far greater negative impacts than wealthier countries that have been able to invest in adaptation.

The number of people killed and displaced by the climate crisis has skyrocketed. Many coastal areas and islands have succumbed to sea-level rise, pushing people into already crowded cities. Refugee camps are overflowing, but many wealthy countries have closed their borders to immigrants due to fears about overpopulation.



Australia

Despite the Government's best efforts, Australia is struggling to adapt to the increasingly volatile environment and fraught global context.

The number of severe heatwaves per year has quadrupled since 2020.¹⁰⁵ Coastal flooding frequency has increased by around 200 days per year since the start of the century, with an additional 3 million people impacted by coastal erosion, landslips, or inundation compared to 2020.¹⁰⁶ Ecosystems have collapsed, with native species dying out and water sources drying up. Primary industries and economies relying on ecosystem services have been badly impacted.¹⁰⁷

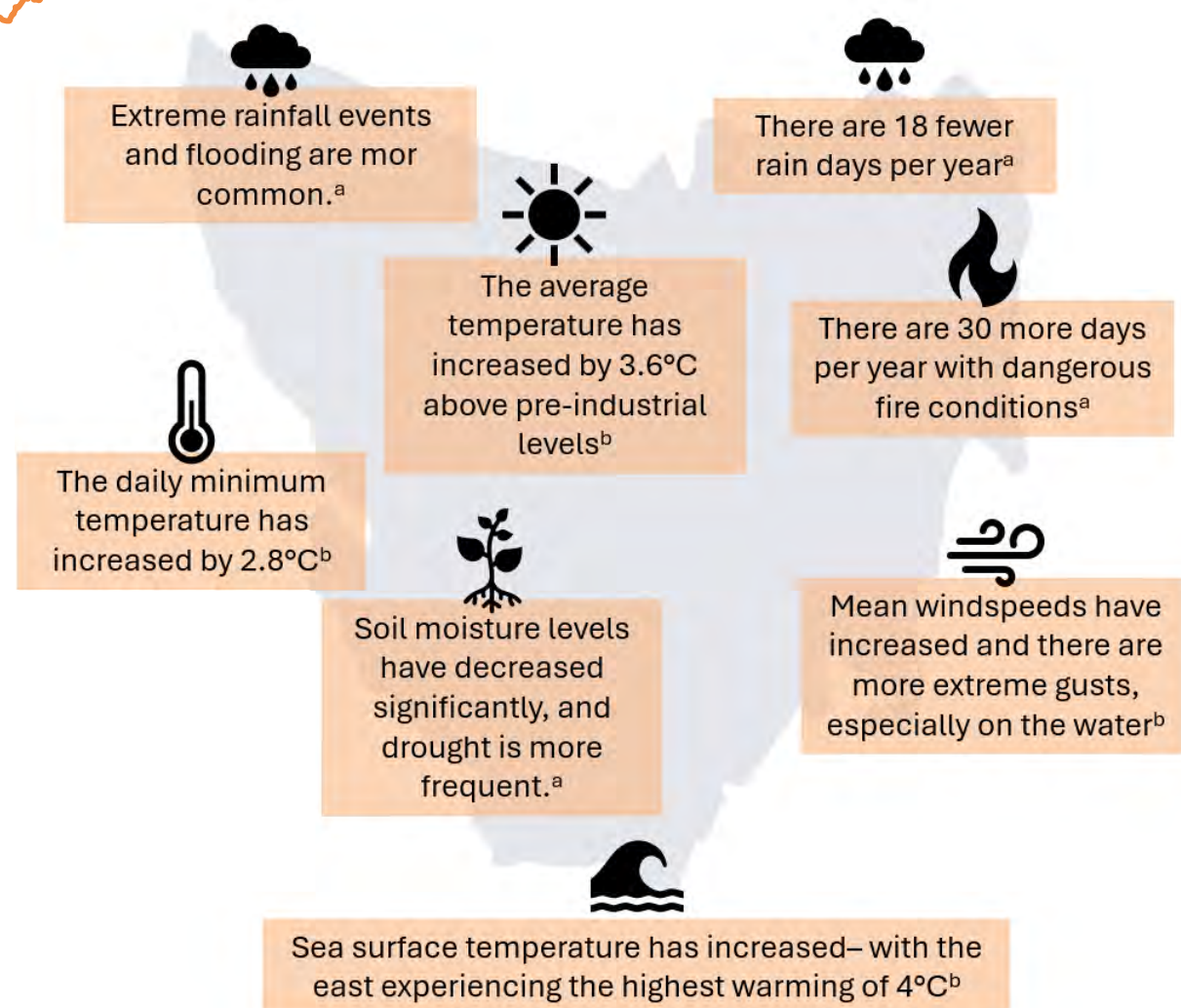
Long-term investments in adaptation by all levels of government have shielded the population from the worst of the climate crisis. For example, Australia's sovereign climate resilience fund has supported adaptation and climate readiness, funding significant programs such as supporting native flora seed banks, enabling community relocation, and the building of sea walls. Annual Australian Government expenditure on disaster relief and recovery is almost seven times higher than if warming had been limited to 1.5°C.

Through adjustments to planning regulations, the bulk of the population has been relocated away from low-lying coastal areas. Innovative urban design and strategic land-use planning have reduced the impact of heat islands, and there is plenty of green space and shade along commuting routes. Buildings are carefully designed to be resilient in the face of extreme weather events. As a result, Australian cities are some of the most liveable in the world.

Despite this, life has become much harder for the average Australian. Extreme weather events are much more frequent and severe, and an influx of climate refugees has created social tensions.¹⁰⁸ There are frequent food and water shortages, and the collapse of international supply chains means that most goods need to be produced domestically.

In the face of the highly unpredictable weather and an increasing number of 'black swan' events, large companies in the energy, insurance, and banking sectors have invested significant time and resources in climate resilience. Coupled with Government-backed insurance schemes, this means that many Australians can still secure home loans for houses that would otherwise be uninsurable.

2090


Tasmania


Temperatures in Tasmania have risen significantly, although warming in the State is still somewhat below the global mean.¹⁰⁹ The Government's careful planning has had a positive impact, but the realities of a much warmer world cannot be avoided.

The State is experiencing frequent heavy rainfall events. Paired with the drying soils, this means that flash flooding occurs much more often, and landslips damage important infrastructure. The impact of most floods is mitigated by several decades of Government leadership in implementing smart monitoring systems, conducting pre-emptive maintenance, and funding climate resilient infrastructure. Nevertheless, lives are still lost, property is destroyed, and some important infrastructure is regularly damaged.

Sea levels have risen the better part of a metre, with much of the Tasmanian coastline suffering from inundation and erosion.¹¹⁰ What were considered 'once-in-a-century' inundation events in 2025 now occur two or three times a decade, with catastrophic consequences for low-lying communities.¹¹¹ Places such Bicheno, Opossum Bay, and Greens Beach have long since been abandoned. The Government has invested in a transition fund to support vulnerable groups who must move to safer areas, but the social and economic costs arising from psychological distress and community breakdown are immense.

The State's farmers have had to change the crops they plant – and in some cases farm in different areas – due to a combination of extreme weather events, increased weed prevalence, new pests and diseases that thrive in the warmer climate, and the degradation of arable land. Recognising food security as one of the biggest priorities, successive Tasmanian Governments have been supporting R&D focused on growing hardier crops to suit the changing climate. Despite improved agricultural practices, locally grown fresh produce is very expensive. Tasmanians have necessarily become more focused on growing their own foods to supplement their diets.

Precious and much-loved ecosystems have collapsed due to changed seasonality of rainfall, hotter temperatures, and the increased range and intensity of bushfires. Several iconic Tasmanian endemic species are extinct in the wild, and sensitive ecosystems such as alpine peatlands and montane rainforests have all but vanished. The Government has implemented a range of programs to address these challenges, including moving endangered species to new habitats and planting hardier native vegetation to maintain green spaces. However, results have been mixed due to the scale of the emergency.

Tasmania is, however, benefitting from the combination of its relatively benign climate and climate-positive approach. The State is a clean energy leader thanks to decades of government investment in education and training, judicious provision of financial incentives and regulatory reform, and flagship public-private partnerships. The resulting opportunities for employment in the low- and zero-emissions technology sector mean that many young Tasmanians decide to stay on the island. The trade-off is that the Government is struggling to manage an increasing population, as large numbers of Australians move to the State from hotter areas. The Government is also under constant pressure to take in more climate refugees.

Careful planning has seen previous governments prepare for the increase in health challenges resulting from climate change. Trade-offs have had to be made, but the most vulnerable Tasmanians are prioritised in the health system. Nonetheless, the rise in extreme heat and disaster events has meant that climate-related illness and mortality have steadily risen.

**Extreme weather event:
Launceston flood**



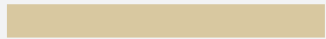
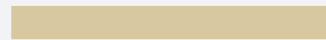
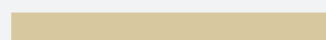
Recently, a compound estuarine flood occurred in Launceston. This was caused by a combination of elevated water levels in the Kanamaluka/Tamar Estuary (due to storm tides) and simultaneous flooding of the North and South Esk Rivers.¹¹² Some of the effects of the flood were mitigated by effective adaptation measures implemented over the previous decade, including a major upgrade of the flood levee system. Additionally, many households and businesses located in low-lying suburbs had been relocated through a staged process. Advanced weather forecasting and emergency warning systems ensured that the population was evacuated early and in an orderly manner.

Despite the new protective infrastructure, the scale of the flooding meant that the water reached central Launceston. Three lives were lost and around 60 homes were destroyed. Many buildings in the CBD were damaged, as were roads, power lines and phone towers, and sewerage systems.

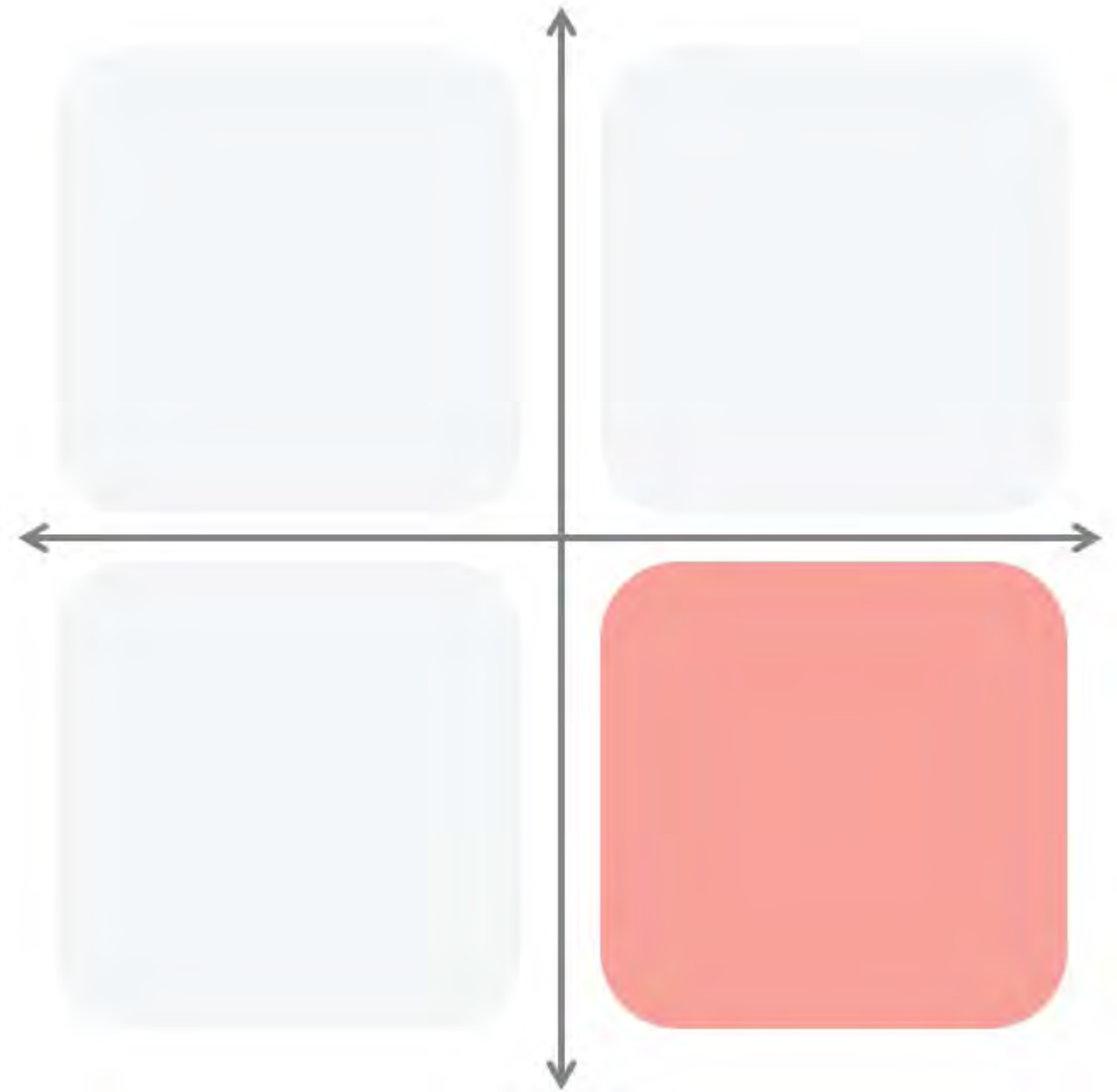
The large emergency response was well-coordinated, but the scale of the damage created challenges. The recovery process was efficiently delivered according to plans that had been developed several years earlier and regularly updated. The Government quickly established a reconstruction fund that is enabling uninsured residents and business owners to rebuild, but it is unlikely to cover all the costs.



2090 Sector Impacts

	Financial Capital - Financial pressures due to climate change are very high but are somewhat moderated by forward planning and more resilient infrastructure. - Tasmania's increased population has expanded the customer base for some GREs, enabling some financial efficiencies thanks to improved economies of scale. - Tasmania's early clean energy leadership and relatively benign climate have attracted many profitable industries to the State. These are now boosting the economy and supporting investment in GREs.
	Intellectual Capital - New technologies are helping GREs to dynamically adapt their business models to cope with the impacts of climate change. - Risk assessments and adaptation strategies have become more sophisticated and are important intellectual assets for GREs.
	Manufactured Capital - GREs are heavily reliant on domestic manufacturing capability. - Infrastructure is being constructed and maintained to much higher standards than previously to ensure climate resilience and safety. - Where possible, some GREs have relocated infrastructure to areas less affected by climate impacts.
	Social and Relationship Capital - Social license for some GREs is deteriorating, with customers frustrated by more limited service provision, increasingly persistent service disruptions, and increasing costs. - The growing population is causing some social cohesion challenges.
	Human Capital - Tasmania's well-established skilled workforce means GREs can meet their workforce needs. - Flexible working arrangements have become the norm due to technological advances and the extremely volatile climate. - Unavoidable outdoor work now comes with many more dangers.
	Natural Capital - Despite Government-led environmental protection efforts, several of the State's land and sea ecosystems have collapsed and much of its arable land has been severely degraded. - Tasmania routinely experiences extended periods of drought, punctuated by torrential downpours that cause flash flooding and further soil erosion.

Scenario 4: Runaway Crisis



2030



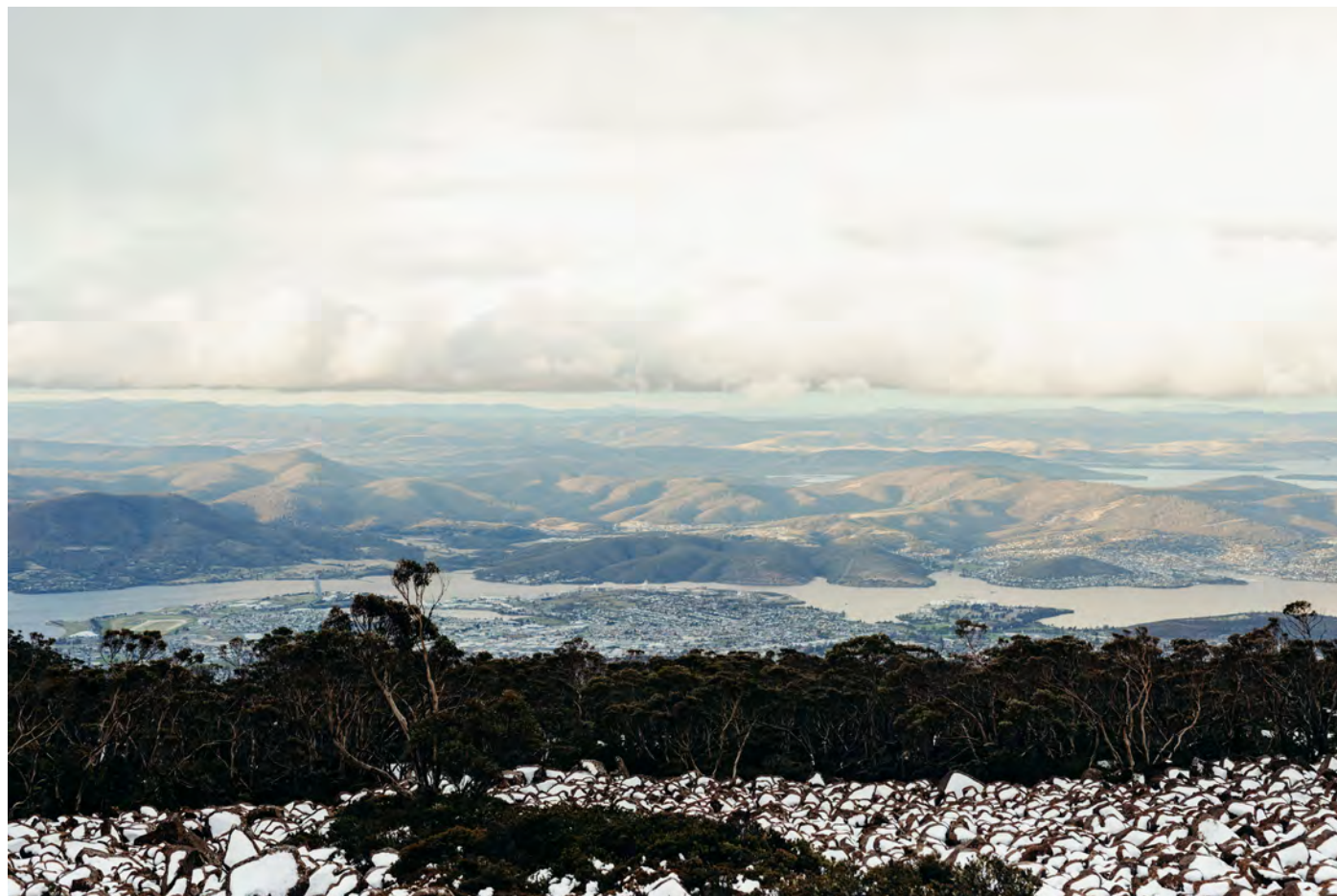
Global

The global mean temperature has risen by 1.5°C compared to pre-industrial levels. This has increased the frequency and severity of extreme weather events and their impacts, including flooding and fires, across the world.

Some countries are meeting their emissions reduction pledges, but many are hesitant to make further and more ambitious reductions. After a damaging blame game among world leaders, there is concern regarding the future of the annual international climate-action conference, the Council of Parties (COP). National leaders are concerned about the 'free-rider' problem – other countries not playing their part in emissions reduction – and have begun shifting investment away from emissions reduction and into climate adaptation and national security.

Climate-conscious lifestyle changes, especially in more well-resourced societies, such as plant-based diets and low-carbon travel, are becoming more mainstream. Renewable-energy technologies – including solar and wind generation and battery storage – are continuing to get cheaper, with many businesses and industries developing new and innovative production processes.

Climate-related premature deaths are rising, and tropical diseases (such as dengue fever and malaria) are becoming more widespread as temperatures increase.



Australia

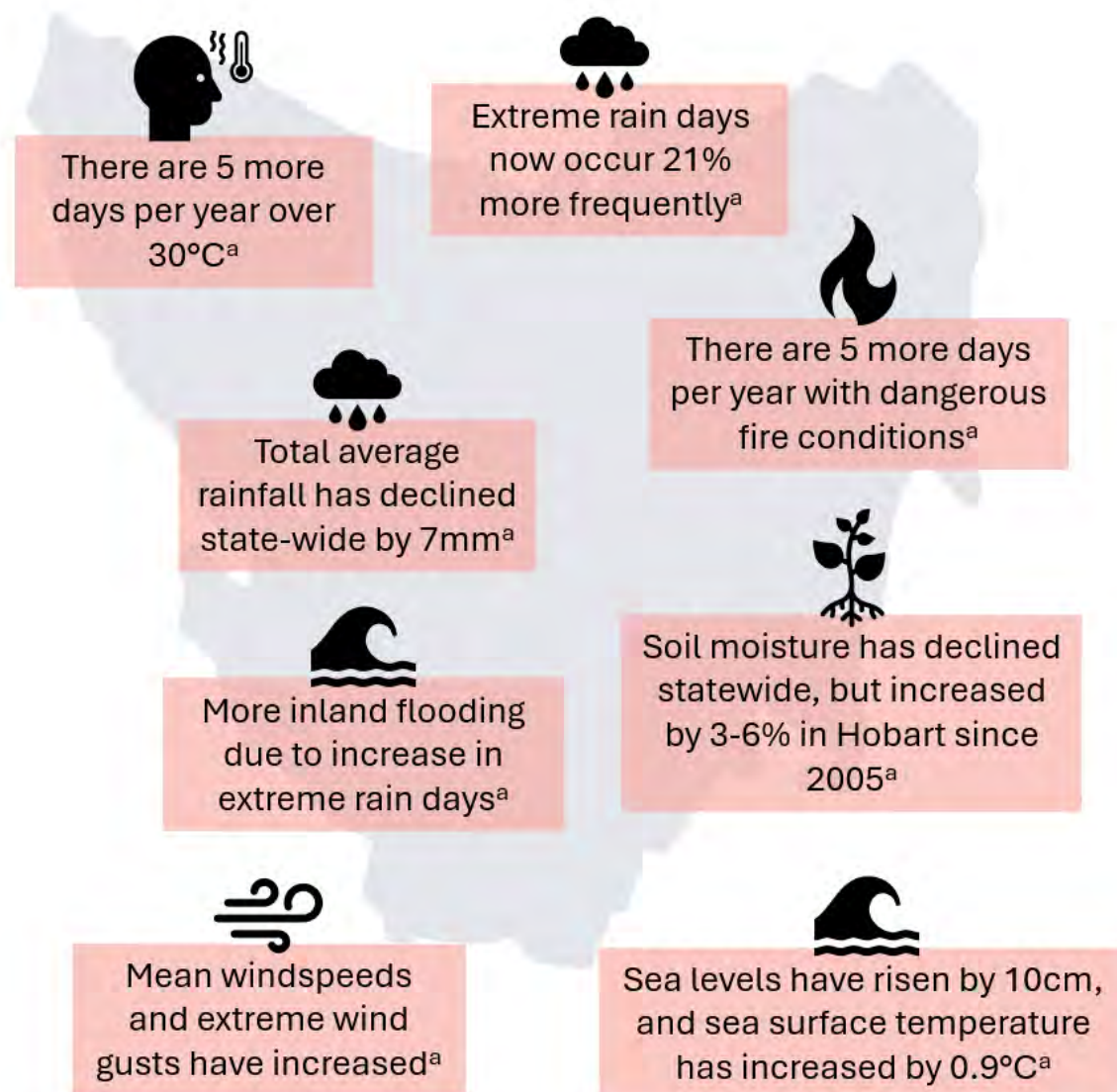
The Australian Government is falling behind international efforts to reduce emissions and develop adaptation strategies. Mainland Australia is warming faster than the global mean temperature because inland areas heat more rapidly than coastal areas.

Rainfall is beginning to noticeably decrease in the southern areas of WA and in SA, resulting in more time spent in drought. Due to a lack of wide-spread infrastructure planning, competition for water is increasing, with inequitable distribution across the nation. Seeing opportunities, private companies have begun investing in desalination plants, but these may take years to come online.

Drought and higher temperatures are leading to more devastating bushfires, especially in the southern and eastern parts of Australia.¹¹³ Extreme weather events such as flooding and cyclones are also becoming more frequent and severe. Because of this, many Australian families and businesses struggle to get insurance, particularly in 'high-risk' coastal and forest areas. Where insurance is available, the premiums are becoming unaffordable for many and are beginning to exclude 'climate-change related extreme events'.

The increase in disasters is beginning to affect global and domestic supply chains. Flooding and bushfires have meant that some critical chemicals, medical and food supplies, and some perishable goods are not always available when and where they are needed.

There is increasing societal polarisation. Many concerned citizens, frustrated by the lack of state and federal government action, have resorted to increasingly disruptive campaigning. Those who believe climate action is unnecessary criticise these activists, and the rhetoric on both sides is becoming increasingly violent. Independent, pro-climate action candidates continue to do well in urban electorates, inflaming inter-regional political tensions. Corporations and businesses still try to maintain green credentials to appeal to consumers and increase sales. For some companies, this has meant beginning to shift operations overseas.



Although Tasmania is less severely impacted than the Australian mainland, climate change is already causing significant disruptions. The Tasmanian Government is not allocating significant resources to emissions reduction and adaptation planning.

Summer heatwaves arrive earlier and last longer. In some areas, residents endure three or four more high-heat days each year than in 2025. Each heatwave day contributes to as much as a 9% increase in all-cause mortality,¹¹⁴ with older and vulnerable Tasmanians most affected. Limited Government action means that heat-related deaths are higher than they could have been.

The changing climate is already impacting the State's land and sea ecosystems. Alpine areas are drying out, and bushfires have destroyed stands of Pencil Pine and Deciduous Beech. Several endemic plant and animal species are on the edge of extinction. Pest infestations, disease outbreaks and algal blooms are increasingly common.

There is a moderate increase in the frequency and severity of extreme weather events. This has caused disruptions for many and meant that several communities have had to relocate while they wait for a slow and costly rebuild process after a recent flooding event. There is little Government support available to these communities.

The Government continues to face fiscal challenges, with net debt expected to continue growing for at least five more years. Fading Tasmanian Government support has meant that the State has only met a few of the commitments outlined in sectoral ERRPs. Many climate-related grant programs have been wound up due to funding challenges and low political appetite. Tasmania is at risk of losing its net-zero status, to the dismay of businesses that trade on our 'clean, green' reputation. Regulatory barriers make it difficult and expensive to progress renewable energy projects. As a result, Tasmania is generating three to four times less wind power than it could and has failed to meet the TRET.

Renewable technology uptake has been slower than expected, with private businesses proving to be the main drivers. However, many businesses and investors are considering moving to countries that prioritise climate action because they are concerned about being shut out of the emerging low-carbon trading blocs.



**Extreme weather event:
Kunanyi/Mount Wellington bushfire**

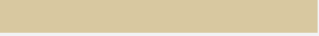


Kunanyi/Mount Wellington and surrounding areas of Greater Hobart have been ravaged by a recent bushfire. Triggered by dry lightning, the fire rapidly spread due to a combination of scorching temperatures, high winds and low soil moisture.¹¹⁵ A lack of effective planning up until this point meant that the effects of the fire were much worse than they could have been: key fire trails (such as Big Bend) were in poor condition, making it difficult for firefighters to respond effectively; and the lack of backburning meant that the fire burned hot and travelled fast. Help from interstate was minimal as personnel and firefighting equipment were engaged with devastating fires in their own regions. Nearly 100 people died and 9,000 lost their homes. Suburbs affected included Glenorchy, Mount Stuart, West Hobart, Fern Tree, South Hobart, Mount Nelson, Tarooma, and Kingston.

Recovery from the fire has been slow. Important infrastructure was destroyed, including critical transmission lines in the hills above Glenorchy, causing ongoing power outages for large parts of Hobart. The Waterworks Reserve and other catchments were damaged, impacting drinking water supplies for several years. Many schools and other businesses have had to shut for nearly four weeks. The Government has been forced to borrow significant amounts to fund reconstruction efforts, worsening the already perilous debt situation. Many of the displaced Hobart residents still don't have permanent accommodation and mental health services are unable to meet demand.



2030 Sector Impacts

	Financial Capital • The Government's fiscal situation is worsening, exacerbated by the rising cost of natural disasters, encouraging it to squeeze the highest possible dividends from GREs. • GREs experience rising costs, largely due to infrastructure damage caused by an increasingly challenging climate. • There is little Government support for up-front spending on climate resilience. • Limited demand for renewable energy from mainland Australia has reduced revenue-generation opportunities. • Tasmania's increasingly productive plantation forests offer additional revenue-generation opportunities.
	Intellectual Capital • A lack of Government leadership means that domestic climate-related R&D is stagnating. • Valuable institutional knowledge is being lost because of high staff turnover driven by an increasingly unsatisfying – and for some, hazardous – work environment.
	Manufactured Capital • The frequency and severity of extreme-weather events cause some supply-chain and infrastructure-related disruptions and creates challenges for GREs that manage large and complex infrastructure portfolios. • The increasingly challenging climate requires more regular infrastructure maintenance and renewal. • Lack of Government support makes it expensive to upgrade infrastructure to be more climate resilient.
	Social and Relationship Capital • GREs' social license is largely maintained despite some service disruptions and increased cost of services. • Sufficient resources mean that GREs are not forced into competition and continue to work cooperatively, but the Government's lack of climate action causes some tensions.
	Human Capital • GRE workforces are under pressure to do more with less in the face of budget constraints, causing mental health challenges for some staff. • The increase in heatwaves and extreme weather events means that there are more days when outdoor work cannot be conducted; it also means that employees are working from home more often and taking more frequent sick and stress leave. • The lack of state-level planning across education and training, population, and workforce development is beginning to be felt, with skills shortages worsening.
	Natural Capital • Rising temperatures and the increased frequency and severity of extreme-weather events are beginning to change the State's land and sea ecosystems. • The Government is not prioritising improving the resilience of Tasmania's environment to climate change.

2050



Global

The planet is warming every year, with the mean temperature having risen by 2.1°C. Many parts of the world now face heatwaves between two and five times more frequently than in the early 21st century.¹¹⁶ In some regions, heavy rainfall events that used to happen once a decade now occur every two to three years.¹¹⁷

Large urban slums in developing countries are becoming climate-devastation hotspots: flooding, heat, disease, and displacement create chronic humanitarian challenges. The number of climate refugees has increased significantly due to loss of livelihoods in vulnerable regions.

Trust in global and national institutions is being eroded by their clear failure to address the climate crisis. Inequality has deepened as rich countries and communities that can afford to adapt do so, while poorer countries and communities bear the brunt.

Collective and coordinated climate action between countries has all but disappeared and the annual COP meetings are a distant memory. Countries have turned their focus inwards and geo-political tensions are high as resources become scarcer and more expensive.

A failure to prepare ahead of time means that responses to climate disasters are chaotic, reactive, and expensive. Emergency sea walls, mobile cooling shelters and even last-ditch geo-engineering experiments are commonplace, but they cost much more and achieve much less than earlier strategic and coordinated planning would have done.

Across the world, vital biodiversity is being lost due to increasing temperatures and limited international environmental protection efforts. Many species of flora and fauna that could not adapt have become extinct, while others are severely threatened.



Australia

Climate change is having a profound effect on Australia, and the Federal Government's failure to prepare means that the situation is even worse than it could have been.

Average temperatures in some inland regions of Australia now regularly exceed 40°C in summer, while southern coastal cities experience more frequent and intense heatwaves. In NSW, Victoria, and southern Queensland, there are roughly 40-50% more 'very high fire danger' days than there were in 2000.¹¹⁸

Rainfall is very erratic. Southern and eastern regions experience longer dry spells punctuated by extreme downpours, while northern parts of the country face intensified monsoonal flooding. As a result, river flows and dam levels fluctuate unpredictably, with hydroelectric systems in Tasmania and Victoria unable to meet demand during prolonged dry periods. This forces periodic energy rationing, and those who can afford to do so have installed off-grid systems.

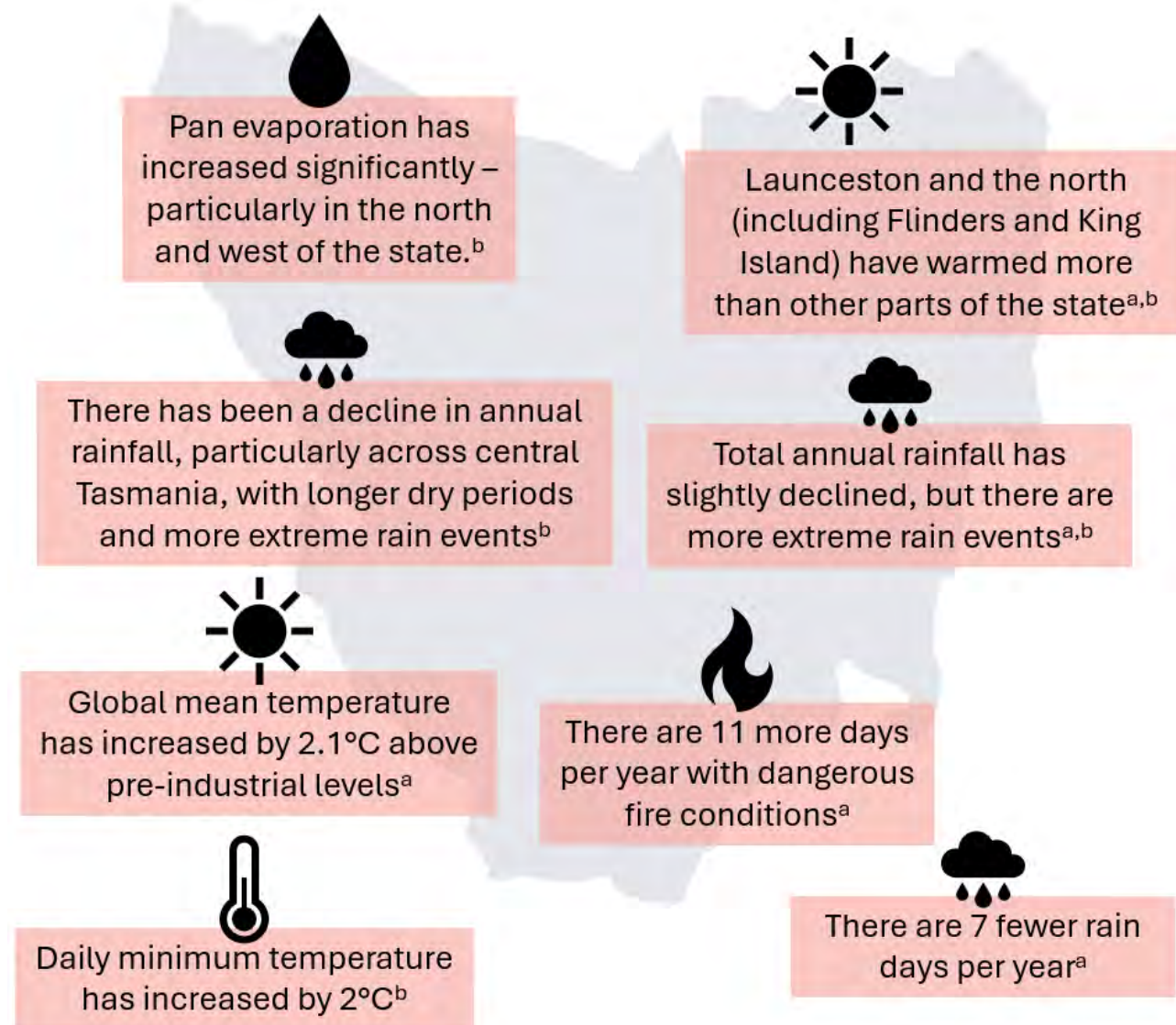
Increasingly regular flooding and coastal inundation events, coupled with the absence of protective infrastructure such as levees, mean that properties in low-lying areas have become uninsurable. Those who can afford to leave these areas have done so, and the people left behind live in constant fear of the next flood.

Australia's agricultural system is collapsing. Heat, flooding, drought, and bushfires lead to soil erosion, drying and salination, severely reducing the availability of arable land. Crops such as wheat and cotton are barely viable, and locally grown fresh produce is becoming increasingly scarce. Some farmers have managed to transition to hardier crops, but the lack of government support and policy leadership has been noticeable.

Supply-chain disruptions caused by extreme weather and trade tensions mean there are often shortages of fresh food, pharmaceuticals, building materials, and other vital products. The lack of Government forward-planning means that small-scale, fragmented domestic industries are unable to fill the gaps. Prices are rising steadily.

Inward migration continues to increase as those fleeing from places suffering even more – such as Indonesia and the Pacific – seek refuge. Social tensions grow as Australians worry about resource scarcity and over-crowding.

2050


Tasmania


Temperatures in the State have risen considerably, surpassing critical thresholds for avoiding the most severe impacts. The Tasmanian Government's lack of focus on building climate resilience means that there is no softening the negative impacts.

In Hobart and Launceston, the number of days over 30°C has roughly doubled since the start of the century. The highest temperature days are up to 8°C hotter than in 2015, with the northwest, northeast and the Bass Strait Islands suffering the most.¹¹⁹ Higher temperatures, longer dry spells, increased dry lightning, and other changes mean that Tasmania's fire season is longer and more dangerous. The number of 'very high fire danger' days has increased by 40% since 2015, and the average land area at high risk of bushfire in spring has increased by 80%.¹²⁰

Each year, some areas are enduring extended droughts and others more extreme rain days. In the absence of Government leadership, the changing rainfall patterns have created water shortages and quality issues. There are some efforts by private businesses to set up desalination plants, but the high upfront costs mean that they have not been successful. Due to drinking-water rationing, Tasmanians have been forced to use less, collect rainwater when possible, and reuse grey water for non-consumption purposes.¹²¹

Much of the agriculture sector is suffering. Low soil moisture and a lack of water for irrigation mean that much of the State's farmland has become unsuitable for traditional crops. Some farmers have adapted to planting hardier crops, while others have stopped farming but are unable to sell their land.

On the positive side, some forestry plantation species and agricultural crops (such as wine grapes) are becoming more productive with rising temperatures.¹²² However, supply-chain breakdowns are making exports difficult, and domestic demand for 'luxury' products is falling.

Storm-surge events considered 'once-in-a-century' in 2025 are now five times more frequent.¹²³ Many properties on the East Coast and in low-lying suburbs near the Derwent and the Tamar Rivers are now uninsurable. Those who can afford to do so have relocated, leaving once-valuable waterfront properties derelict. Proactive investment in more resilient floodwalls or storm-surge barriers could have prevented these problems decades ago, but it is now too late.

The Tasmanian economy is in a very poor state. Higher temperatures and the onslaught of extreme weather events mean that public infrastructure is deteriorating rapidly, but expensive remediation work is only conducted in the most urgent cases – anything considered non-critical is left to crumble due to lack of capital. Tasmania's underfunded healthcare system cannot cope with the rising toll of heat stress-related illness and mortality on scorching summer days.

The State's population is decreasing. Many Tasmanians – particularly young people – are leaving for countries with more proactive climate policy, such as New Zealand. This is somewhat offset by Tasmania's relatively benign climate attracting inwards migration from those who can afford to leave the hotter areas, such as the Northern Territory and Queensland.

Global and local supply chains are very unreliable. Combined with the severe reduction in locally grown produce, this has severely reduced food security. Additionally, access to pharmaceuticals and other vital products is very limited – forcing prices to skyrocket.

In the 2030s and 2040s, Tasmanians increased their use of active and public transport to help reduce emissions. However, due to rising temperatures, many have begun working from home as much as possible. Social divisions are intense: politicians and communities are split over the trade-offs between water, energy security, and environmental impacts, and inequality is rising.

**Extreme weather event:
Storm surge in the southeast**



A storm surge recently hit Lauderdale, Cremorne, and surrounds, inundating low-lying areas. A lack of strategic risk assessment and planning over the previous decade meant that many people were still living in the highly vulnerable properties. There was little preventive infrastructure in place to help limit the damage, and the combination of sea level rise and powerful waves meant the destruction was widespread.

The surging waters caused 15 deaths as residents tried to flee, and scores of houses were severely structurally damaged or destroyed. Because many people did not have insurance, hundreds were left temporarily homeless. The canal between Ralphs Bay and Fredrick Henry Bay broke through, leaving South Arm inaccessible by road. Almost all powerlines in the area went down, and much of the coastline is unrecognisable due to erosion.

The response effort was disorganised due to fragmented emergency planning and limited funds. In the aftermath, some septic tanks overflowed, and cleanup activities had to contend with contaminated water. Several people were hospitalised with gastrointestinal illnesses. The cleanup was slowed by the lack of road access, and services could not be restored to affected areas for several weeks. The community remains in limbo as people try to decide whether to rebuild or relocate – and some cannot afford to do either.



2050 Sector Impacts

	Financial Capital • The Government's fiscal situation is dire, and GREs cannot afford to pay dividends. • GRE costs are rapidly increasing, largely due to infrastructure damage caused by the more volatile climate and the breakdown in supply chains. • Tasmania cannot generate sufficient electricity to supply the State, let alone sell it to the mainland. • The breakdown in supply chains means that opportunities to export natural resources are very limited.
	Intellectual Capital • A lack of Government leadership means that GREs are falling behind in integrating new technologies into their operations. • Most GREs struggle to access accurate forecasting and new technologies for remote maintenance and monitoring. • GREs have lost significant amounts of valuable institutional knowledge because of high staff turnover driven by an increasingly unsatisfying – and for some, dangerous – work environment.
	Manufactured Capital • The breakdown in supply chains means that some vital materials are unavailable. • The greatly increased volatility of the climate means that infrastructure requires constant maintenance and repair. • Lack of Government support makes it expensive and difficult to build climate-resilient infrastructure.
	Social and Relationship Capital • GREs' social license is in tatters. Customers are angry about frequent, prolonged service outages caused by outmoded and poorly maintained infrastructure. • The absence of strong Government leadership means GREs are increasingly left to their own devices, which makes coordination across organisations challenging. • Increasing socioeconomic inequality is fracturing the community.
	Human Capital • There is a shortage of skilled local workers, but this is somewhat offset by skilled migrants from hotter parts of Australia. • The increasingly volatile climate and neglected infrastructure mean that outdoor work is so dangerous, it is only done when absolutely necessary. • Many GRE employees feel increasingly disillusioned with the lack of Government climate action, and experience negative mental and physical health impacts arising from climate disasters. • Employees who can do so frequently work from home to avoid being outside in the volatile climate.
	Natural Capital • The State's land and sea ecosystems are rapidly deteriorating due to the changing climate and lack of government action, with unprecedented species extinction. • Changing rainfall patterns, declining soil moisture, diseases, and pest species are negatively impacting many crops and plantation species, although some are benefitting from higher temperatures. • Tasmania routinely experiences extended periods of drought, resulting in perennial water shortages and quality issues. • The rapid degradation of Tasmania's ecosystems is sending shockwaves through Tasmania's economy and society.

2090



Global

The global mean temperature has increased by 3.6°C compared to pre-industrial levels. Ecosystems have suffered cascading failures: forests and coral reefs have been destroyed; watersheds are degraded; and biodiversity losses are profound. Food insecurity is endemic, driven by widespread deforestation, soil erosion, and agriculture that never fully transitioned to climate-smart practices. Fresh water is scarce, with chronic drought, contamination, and mismanagement making safe drinking water a rare commodity. Public health is burdened by malnutrition, heat stress, and water-borne disease.

Globalisation and intergovernmental cooperation are distant memories. International governance is in tatters, as most countries prioritise self-reliance over cooperation. Many countries are still reliant on fossil fuels. Resource conflicts – particularly over water and arable land – fuel frequent internal skirmishes and cross-border tensions. Developing countries suffer far greater negative impacts than wealthier countries that have been able to invest in adaptation.

The number of people killed and displaced by the climate crisis has skyrocketed. Many coastal areas and islands have succumbed to sea-level rise, pushing people into already crowded cities. Refugee camps are overflowing, but many wealthy countries have closed their borders to immigrants due to fears about overpopulation.



Australia

Australia's environment, society, and economy are vastly changed compared to 2025. The lack of government planning and adaptation efforts over the previous decades mean that life is very hard for most Australians.

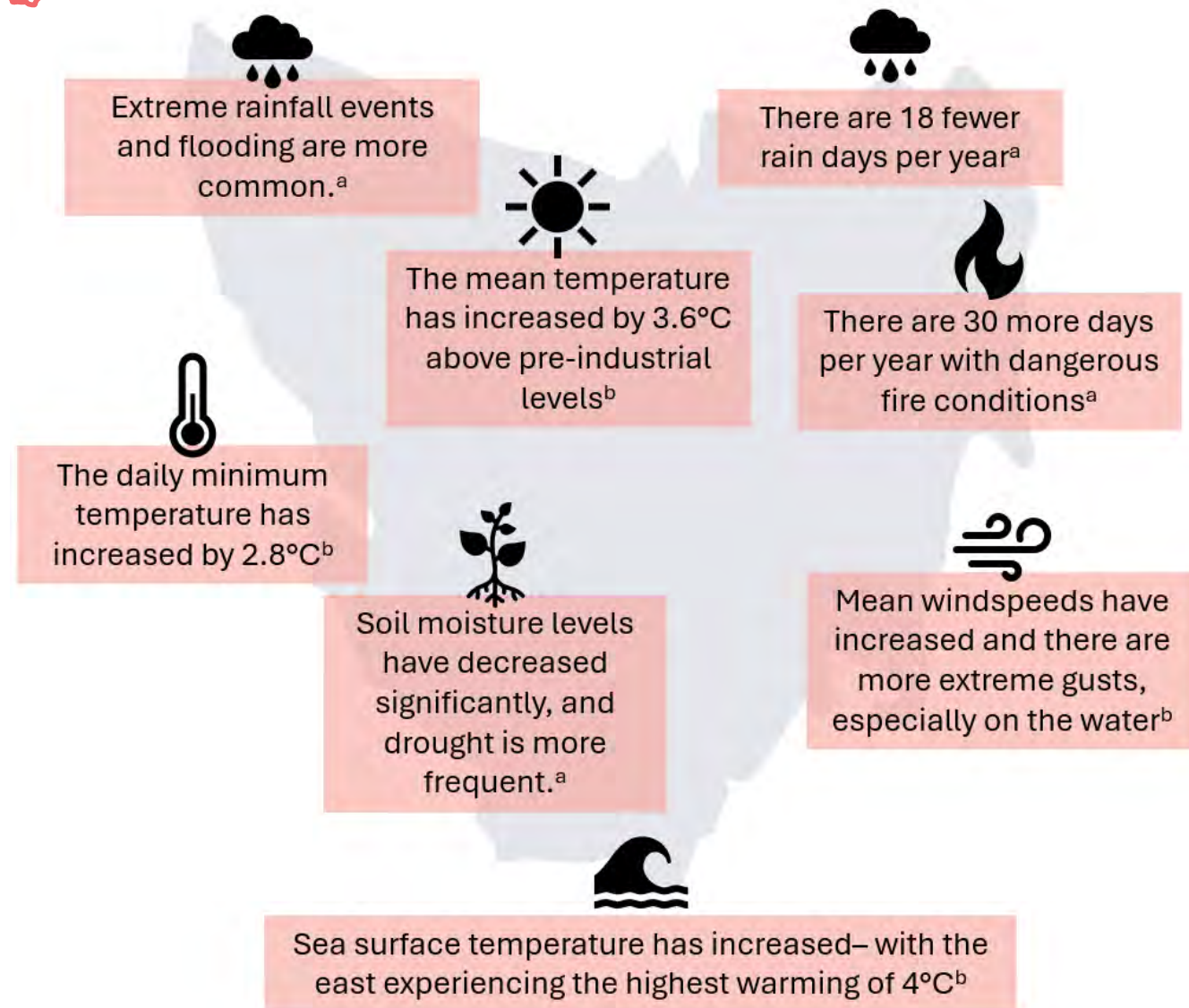
Diverse extreme weather events regularly wreak devastation. The number of severe heatwaves per year has quadrupled since 2020.¹²⁴ Coastal flooding frequency has increased by around 200 days per year since the start of the century, with an additional 3 million people impacted by coastal erosion, landslips, or inundation compared to 2020.¹²⁵ Large bushfires are less common because changing environmental conditions and previous fires have destroyed most of the country's forests.¹²⁶ However, grass fires are common, typically ignited by the increased incidence of dry lightning. Those who can afford to move to safer areas have done so, but vulnerable people are being left behind – and the number of lives lost to disasters continues to mount.

Many ecosystems have collapsed. This has resulted in widespread extinction of native species and severe water shortages. Primary industries and regional economies relying on ecosystem services have been badly impacted.¹²⁷ The loss of familiar ecosystems and species puts great strain on the mental health and wellbeing of Australians.¹²⁸

The Australian economy is in ruins. The staggering cost of reactively responding to extreme weather events is increasing every year.¹²⁹ There is little money left for public services, and their availability and quality are decreasing more with every passing year. Many individuals go without vital treatment in a struggling and overcommitted health system, leading to high mortality rates for treatable disease.

The impact of climate change on productivity and economic growth further exacerbates the problem, with the result that Australians' standard-of-living has fallen considerably.

2090


Tasmania


Temperatures in Tasmania have risen significantly, although warming in the State is still somewhat below the global mean.¹³⁰ The Tasmanian Government's lack of forward planning in adaptation and resilience means that the impacts on Tasmania's environment, society, and economy are devastating.

The State sees heavy rainfall more frequently. Paired with drying soils, this means that flash flooding occurs regularly. These floods cause widespread loss of life and the destruction of houses. They also have devastating effects on infrastructure: dams are more difficult and expensive to maintain; communications infrastructure and transport networks are often destroyed; and stormwater and sewage systems often overflow. Flooding in the northwest and west has been disastrous for crops and forest plantations.

Sea levels have risen the better part of a metre, with much of the Tasmanian coastline suffering from inundation, erosion, and storm surges.¹³¹ What were considered 'once-in-a-century' inundation events in 2025 now occur two or three times a decade, with catastrophic consequences for low-lying communities.¹³² Places such as Bicheno, Opossum Bay, and Greens Beach have long since been abandoned. In the absence of government support and insurance not covering sea-level rise and storm surge impacts, communities forced to relocate have not yet recovered – financially, socially or psychologically.

Some areas of Tasmania have become 'dead zones' due to soil erosion and high salination levels. This combination prevents native or introduced plants from thriving, and the resulting lack of locally grown fresh food means that prices have soared. The breakdown of global and domestic supply chains means that imported produce and processed foods are rarely available. Where possible, Tasmanians have become more focused on growing their own food to supplement their diets. While Tasmania has not yet experienced severe food shortages, it appears to be only a matter of time.

Tasmania's economy has been irrevocably changed. The lack of historical investment in renewable energy generation and the impact of unreliable rainfall on our hydroelectric system mean that the State is dependent on imported and increasingly expensive fossil fuels, which many can't afford.

The State's population is sparse and scattered. Birth rates have plummeted as many people choose not to bring children into what they see as a collapsing world. Inwards and outwards migration have slowed to a trickle due to the difficulties of long-distance travel.

Public services are under unprecedented strain. The increased heat and other climate impacts have overwhelmed the remnants of the health system, with the remaining healthcare workers and emergency responders exhausted. Life expectancy has been steadily decreasing.

Tasmanian society is highly unequal and bitterly divided. Violent conflicts between various groups over access to resources are common. The State struggles to maintain order and is increasingly authoritarian in its approach to suppressing dissent, which in turn creates further division. Wealthier Tasmanians live in gated communities that operate as self-sufficient enclaves, using generators, water-recycling plants, and other small-scale solutions.

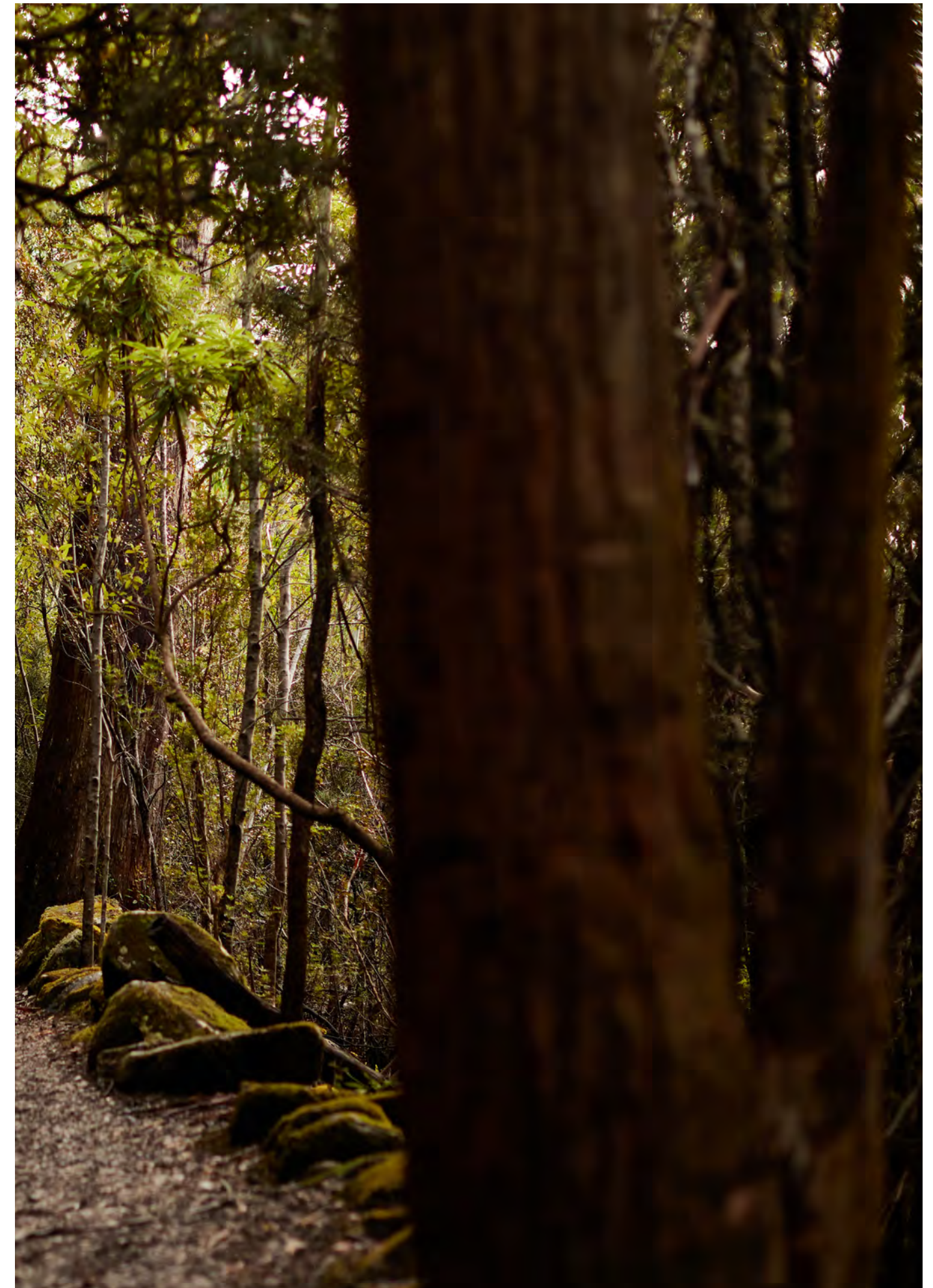
Extreme weather event: Launceston flood

Recently, a compound estuarine flood occurred in Launceston. This was caused by a combination of elevated water levels in the Kanamaluka/Tamar Estuary (due to storm tides) and simultaneous flooding of the North and South Esk Rivers.¹³³ The effects of the flood were exacerbated by limited disaster risk reduction and preparedness efforts over the previous decades: repeated inundations had increased erosion and damaged preventive infrastructure such as levees. The community was still struggling to recover from a similar event which occurred five years earlier.

The flood exceeded all previous records, with large areas of central Launceston submerged under as much as two metres of water. The lack of adequate early warning systems contributed to the loss of around 30 lives, and hundreds of homes suffered structural damage. Landslides dislodged boulders and other debris, causing severe structural damage to thousands of Launceston's buildings. Bridges, roads, and other critical infrastructure (such as phone and power lines) were also ravaged. Damage to stormwater and sewerage infrastructure resulted in drinking water shortages for several weeks after the event.

The emergency response was disorganised due to fragmented planning and damaged communication networks. The ongoing recovery process has been characterised by a bitter blame game between state and local government. There are limited public funds available for reconstruction, and the many uninsured residents and business owners cannot afford to rebuild. They are unsure what to do next.

Months later, hundreds of people are still displaced. The lucky ones are housed in a temporary camp, but due to a lack of space many more are homeless. Anger and division are building, and those suffering from trauma are unable to access support.



2090 Sector Impacts

	Financial Capital - Due to extreme fiscal constraints, several GREs have ceased operating, while others are only able to provide very limited services in some parts of the State. - There are no export-related revenue generating opportunities.
	Intellectual Capital The emphasis on day-to-day survival means that systems and processes have deteriorated to the bare minimum required for basic operation.
	Manufactured Capital - Much of Tasmania's infrastructure is barely useable because maintenance and repair efforts have not been able to keep up with rapid ageing in the harsh climate and damage from extreme weather events. - Global and domestic supply chains have almost completely collapsed, meaning that most of the time the only goods and materials available are those that can be produced locally.
	Social and Relationship Capital - For most of the population, basic services (such as power, water, and telecommunications) are unavailable much of the time. - Despite the falling population, there is fierce competition for resources among GREs, businesses, and the community. Tensions frequently turn violent.
	Human Capital - Many people are unemployed in the formal sense – although they are required to work hard to be self-sufficient. - There is little skilled labour available and no money to pay for it. - Outdoor work has become extremely dangerous.
	Natural Capital - The State's land and sea ecosystems have changed irrevocably. Drought, erosion, salinity, pests, diseases, and a range of other challenges mean that the environment would be unrecognisable to 20th century eyes. - Some highly adaptable plant and animal species have found a way to survive, but even they struggle in the harsh environment. - Significant portions of Tasmania are 'dead zones' where nothing will grow or survive.

Appendix

The scenarios were developed across six main stages (see Figure 7)

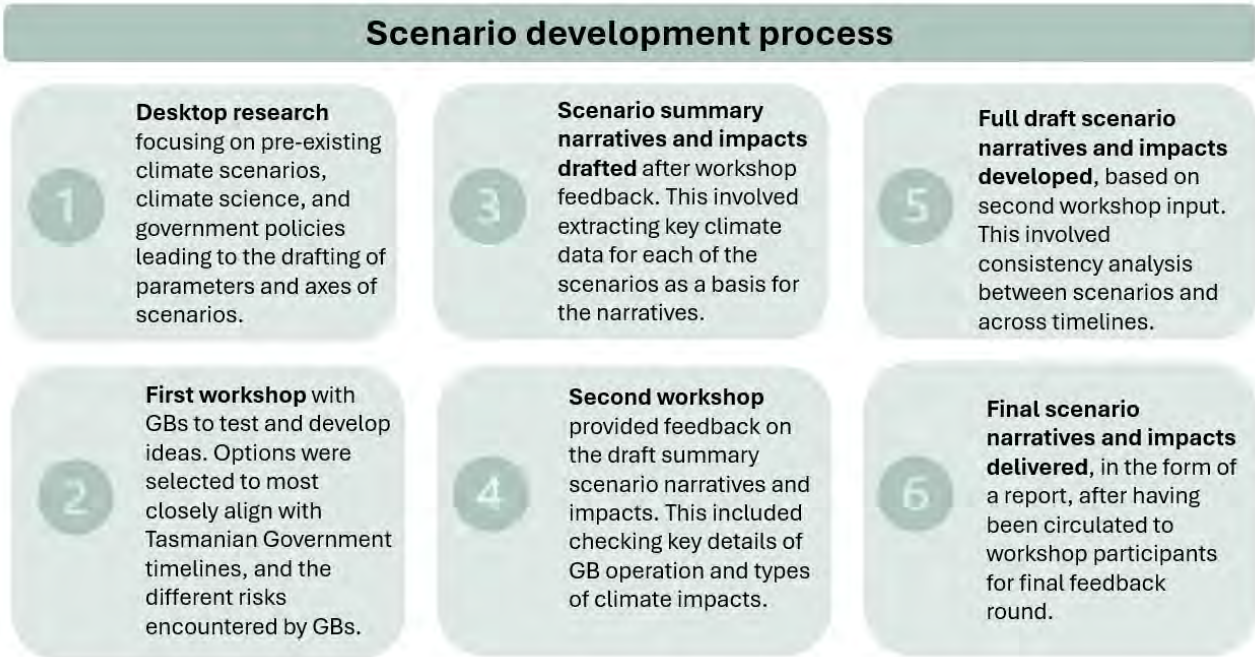


Figure 7: Scenario development process

Endnotes

^a Deloitte, Tasmania's Risk Assessment for Climate Change 2024 Technical Report https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

^b Climate Futures for Tasmania – Technical Report <https://climatefutures.org.au/wp-content/uploads/2023/05/Climate-Futures-General-Climate-Impacts-Full-Report.pdf>

1 IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

2 IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

3 World Meteorological Organization, 2025, 'WMO confirms 2024 as warmest year on record about 1.55°C above pre-industrial level', Press release, 10 January 2025, <https://wmo.int/news/media-centre/wmo-confirms-2024-warmest-year-record-about-155degc-above-pre-industrial-level>; IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

4 Commonwealth of Australia, 2024, 'National Climate Risk Assessment: First pass assessment report', <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

5 Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

6 IPCC, 2023, 'Summary for Policymakers' in: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, p 14, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf

7 IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

8 IPCC, 2023, 'Summary for Policymakers' in: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, p 14, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf

9 See, for example, Elisa Di Febo (2025), 'Transition Risk in Climate Change: A

Literature Review', Risks, 13(7), 139, <https://www.mdpi.com/2227-9091/13/4/66>

10 Department of Climate Change, Energy, the Environment and Water, 2025, 'Draft National Climate Scenario Guidance', pp 17-19, https://storage.googleapis.com/files-au-climate/climate-au/p/prj38c93c7a9e68bf1bf470f/page/Draft_National_Climate_Scenario_Guidance_Consultation_PDF_1.6MB_.pdf

11 University of Auckland, n.d., 'Climate change sector scenarios', <https://www.auckland.ac.nz/en/about-us/about-the-university/the-university/sustainability-and-environment/sustainable-campus-and-operations/net-zero-carbon/climate-change-sector-scenarios.html>; Australasian Campuses Towards Sustainability (ACTS), 2025, 'Navigating Climate Change. Scenarios for Australia's Tertiary Education Sector', <https://www.acts.asn.au/what-we-do/climatescenarios/>

12 IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

13 IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

14 World Meteorological Organization, 2025, 'WMO confirms 2024 as warmest year on record about 1.55°C above pre-industrial level', Press release, 10 January 2025, <https://wmo.int/news/media-centre/wmo-confirms-2024-warmest-year-record-about-155degc-above-pre-industrial-level>

15 IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

16 IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

17 IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

18 IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

19 IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

20 IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC,

Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

21 IPCC, 2023, 'Full Volume' in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf

22 Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

23 Australian Government, Australian Accounting Standards Board, n.d. 'Sustainability Reporting Standards', accessed 15 December 2025, <https://standards.aasb.gov.au/sustainability-reporting-standards>

24 See the Corporations Act 2001 (Cth), the Climate Change Act 2022 (Cth), and Australian Government, Australian Accounting Standards Board, 2024, 'Australian Sustainability Reporting Standard AASB S2 Climate-related Disclosures', Issue date 20 September 2024, paragraph 11, https://standards.aasb.gov.au/aasb-s2-sep-2024#para_11

25 Australian Government, Australian Accounting Standards Board, 2024, 'Australian Sustainability Reporting Standard AASB S2 Climate-related Disclosures', Issue date 20 September 2024, <https://standards.aasb.gov.au/aasb-s2-sep-2024>

26 Task Force on Climate-related Financial Disclosure, 2017, 'Recommendations of the Task Force on Climate-related Financial Disclosures Final Report', <https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf>; Task Force on Climate-related Financial Disclosure, 2020, 'Guidance on Scenario Analysis for Non-Financial Companies', <https://assets.bbhub.io/company/sites/60/2020/09/2020-TCFD-Guidance-Scenario-Analysis-Guidance.pdf>

27 Australasian Campuses Towards Sustainability (ACTS), 2025, 'Navigating Climate Change. Scenarios for Australia's Tertiary Education Sector', <https://www.acts.asn.au/what-we-do/climatescenarios/>; Insurance Council of Australia (2025), 'Extreme weather losses in 2025 exceed \$1.8 billion', <https://insurancecouncil.com.au/resource/extreme-weather-losses-in-2025-exceed-1-8-billion/>

28 State of Victorian Department of Environment, Land, Water and Planning, RMIT University, 2020, 'Regional Climate Change Adaptation Strategy Guidance Note 5' https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0041/489686/RAS-GN5_-_Exploring-Multiple-Futures-.pdf

29 ReCFIT, n.d., 'What are the projected climate change impacts for Tasmania?', accessed 15 December 2025, https://www.recfit.tas.gov.au/what_is_recfit/climate_change/adapting/projected_impacts

30 IPCC, 2023, 'Summary for Policymakers' in: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf

31 Task Force on Climate-related Financial Disclosure, 2017, 'Recommendations of the Task Force on Climate-related Financial Disclosures Final Report', <https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf>

32 See, for example, Elisa Di Febo (2025), 'Transition Risk in Climate Change: A Literature Review', Risks, 13(7), 139, <https://www.mdpi.com/2227-9091/13/4/66>

33 Task Force on Climate-related Financial Disclosure, 2017, 'Recommendations of the Task Force on Climate-related Financial Disclosures Final Report', <https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf>

34 Keywan Riahi, Detlef P. van Vuuren, Elmar Kriegler, Jae Edmonds, Brian C. O'Neill,

Shinichiro Fujimori, Nico Bauer, Katherine Calvin, Rob Dellink, Oliver Fricko, Wolfgang Lutz, Alexander Popp, Jesus Crespo Cuaresma, Samir KC, Marian Leimbach, Leiwen Jiang, Tom Kram, Shilpa Rao, Johannes Emmerling, Kristie Ebi, Tomoko Hasegawa, Petr Havlik, Florian Humpenöder, Lara Aleluia Da Silva, Steve Smith, Elke Stehfest, Valentina Bosetti, Jiyong Eom, David Gernaat, Toshihiko Masui, Joeri Rogelj, Jessica Stremler, Laurent Drouet, Volker Krey, Gunnar Luderer, Mathijs Harmsen, Kiyoshi Takahashi, Lavinia Baumstark, Jonathan C. Doelman, Mikiko Kainuma, Zbigniew Klimont, Giacomo Marangoni, Hermann Lotze-Campen, Michael Obersteiner, Andrzej Tabeau, Massimo Tavoni, 'The Shared Socioeconomic Pathways and their energy, land use, and greenhouse gas emissions implications: An overview', Global Environmental Change, Volume 42, 2017, Pages 153-168, ISSN 0959-3780, <https://doi.org/10.1016/j.gloenvcha.2016.05.009>; United Nations Economic Commission on Europe (2019), 'Shared Socioeconomic Pathways (SSPs)', https://unece.org/fileadmin/DAM/energy/se/pdfs/CSE/PATHWAYS/2019/ws_Consult_14_15.May.2019/supp_doc/SSP2_Overview.pdf?__cf_chl=tk=2kVMYjnKAcRtcZlu6ob9CPIS9TJ3IAMUzTfMoQKaoZQ-1770270981-1.0.1.1-n1O0Fa0sV.8lReZy0nQa4YqEMlXxPO8u.KVZPVERc1Y; Climate Data Canada (n.d.), 'Understanding Shared Socio-economic Pathways (SSPs)', <https://climatedata.ca/resource/understanding-shared-socio-economic-pathways-ssps/#:~:text=Today%2C%20the%20scenarios%20used%20to,range%20of%20very%20different%20futures>

35 IPCC, 2023, 'Summary for Policymakers' in: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001, p 14, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf

36 World Bank Group, Integrated Reporting, n.d., 'Focusing on value creation in the public sector, An introduction for leaders', Draft report <https://documents1.worldbank.org/curated/en/299271472736350366/pdf/107204.pdf#:~:text=The%20value%20creation%20process%20An%20integrated%20report,intellectual%2C%20human%2C%20social%20&%20relationship%2C%20and%20natural>

37 Integrated Reporting, n.d., 'Featured IR practices and awards', https://examples.integratedreporting.ifrs.org/featured-practices/?query_page=0&app_region=&app_industry=&app_year=&app_principle=&app_fundamental=58&app_content=&app_award_category=

38 Department of Climate Change, Energy, the Environment and Water, 2025, 'Draft National Climate Scenario Guidance', pp 17-19, https://storage.googleapis.com/files-au-climate/climate-au/p/prj38c93c7a9e68bf1bf470f/page/Draft_National_Climate_Scenario_Guidance_Consultation_PDF_1.6MB_.pdf

39 Department of Climate Change, Energy, the Environment and Water, 2025, 'Draft National Climate Scenario Guidance', https://storage.googleapis.com/files-au-climate/climate-au/p/prj38c93c7a9e68bf1bf470f/page/Draft_National_Climate_Scenario_Guidance_Consultation_PDF_1.6MB_.pdf

40 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

41 Climate Change in Australia, Australian Government, n.d., 'Temperature Change', accessed 15 December 2025, <https://www.climatechangeinaustralia.gov.au/en/changing-climate/future-climate-scenarios/global-warming-levels/temperature-change/>

42 The Superpower Institute, n.d., 'The Case for Pricing Pollution', <https://www.superpowerinstitute.com.au/resource/file-81777a577b8880161433b1a35847a9b532244a5b-pdf/TSI-The-Case-for-Pricing-Pollution-Full-Report-Jan29.pdf>

43 Sharon L. Campbell, Nicolas Borchers-Arriagada, Grant J. Williamson and Fay

H. Johnson, 2021, 'Assessing mortality associated with heatwaves in the cool climate region of Tasmania, Australia', The Journal of Climate Change and Health, 17, May-June 2024, <https://www.sciencedirect.com/science/article/pii/S2667278224000051>

44 Libraries Tasmania, 2017, 'The Fire of '67', <https://libraries.tas.gov.au/slat/blog/the-fire-of-67/>; Langenberg, A., 2022, 'Black Tuesday 1967 bushfire legacy lives on in fire trail upgrade on Hobart's kunanyi/Mt Wellington', ABC News, 8 February 2022, <https://www.abc.net.au/news/2022-02-08/kunanyi-mt-wellington-fire-trail-upgrade-55-years-on-black-tues/100810500>

45 Department of Climate Change, Energy, the Environment and Water (2025), 'Nature Repair Market', <https://www.dcceew.gov.au/environment/environmental-markets/nature-repair-market>

46 Science Based Targets (2025), SBTi Power Sector Net-zero Standard, Version 1.0 First Consultation Draft, Table E1, p. 80, <https://files.sciencebasedtargets.org/production/files/SBTi-Power-Sector-Net-Zero-Standard-Public-Consultation-Draft.pdf>

47 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', p 25, <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

48 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', p 44, <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

49 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', p 44, <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

50 Timothy Higgins, Mark Howden, Kate Lawrence, Roslyn Prinsley, Caroline Schuster, Liam Taylor and Ning Wang, 2024, 'Submission: Impact of Climate Risk on Insurance Premiums and Availability', ANU Institute for Climate, Energy & Disaster Solutions, <https://iced.s.anu.edu.au/files/Submission.%20Impact%20of%20Climate%20Risk%20on%20Insurance%20Premiums%20and%20Availability.PDF>; Insurance Council of Australia, n.d., 'Climate Action', accessed 15 December 2025, <https://insurancecouncil.com.au/campaigns/future-proof-australia/climate-action/>

51 Australian Government, 2023, 'Intergenerational Report 2023', <https://treasury.gov.au/sites/default/files/2023-08/p2023-435150.pdf>

52 Government of Western Australia, Department of Primary Industries and Regional Development, 2016, 'Generalised Land Use of South West Western Australia', https://library.dpir.wa.gov.au/gis_maps/9/

53 Grose MR, Barnes-Keoghan I, Corney SP, White CJ, Holz GK, Bennett JB, Gaynor SM and Bindoff NL, 2010, 'General Climate Impacts Technical Report', Climate Futures for Tasmania, p 4, <https://climatefutures.org.au/wp-content/uploads/2023/05/Climate-Futures-General-Climate-Impacts-Full-Report.pdf>

54 Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

55 Grose MR, Barnes-Keoghan I, Corney SP, White CJ, Holz GK, Bennett JB, Gaynor SM and Bindoff NL, 2010, 'General Climate Impacts Technical Report', Climate Futures for Tasmania, p 4, <https://climatefutures.org.au/wp-content/uploads/2023/05/Climate-Futures-General-Climate-Impacts-Full-Report.pdf>

56 Projections for Hobart have been extrapolated out: ReCFIT, n.d., 'Local climate profile Hobart City Municipality', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0004/489829/Hobart_Climate_Profile.pdf

57 Pinkard, L., Bruce, J., Battaglia, M., Matthews, S., Drew, D., Downes, G., Crawford, D., & Ottenschlaeger, M., 2014, "Adaptation strategies to manage risk in Australia's plantations", Forest & Wood Products Australia.

58 Grose MR, Barnes-Keoghan I, Corney SP, White CJ, Holz GK, Bennett JB, Gaynor

SM and Bindoff NL, 2010, 'General Climate Impacts Technical Report', Climate Futures for Tasmania, p 42, <https://climatefutures.org.au/wp-content/uploads/2023/05/Climate-Futures-General-Climate-Impacts-Full-Report.pdf>

59 Adapted from tables 20 and 24: Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

60 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', p 55, <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

61 Morton, A., 2026, 'Australia's grid now relies on renewable energy as much as coal. Those who doubted it look foolish', The Guardian, 20 January 2026, <https://www.theguardian.com/environment/2026/jan/31/australias-grid-now-relies-on-renewable-energy-as-much-as-coal-those-who-doubted-it-look-foolish>

62 Drawing on: Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', pp 32, 36, <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

63 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', p 52, <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

64 Australian Climate Service, 2025, 'National Disasters and Emergency Management Technical Report', p 4, <https://www.arcgis.com/sharing/rest/content/items/e5a13d2c202e4390a98f07cbea29cf16/data>

65 Grose MR, Barnes-Keoghan I, Corney SP, White CJ, Holz GK, Bennett JB, Gaynor SM and Bindoff NL, 2010, 'General Climate Impacts Technical Report', Climate Futures for Tasmania, p 42, <https://climatefutures.org.au/wp-content/uploads/2023/05/Climate-Futures-General-Climate-Impacts-Full-Report.pdf>

66 Kathleen L. McInnes, Didier Monselesan, Julian O Grady, John Church and Xuebin Zhang, 2016, 'Sea-Level Rise and Allowances for Tasmania based on the IPCC AR5', Report for Tasmanian Department of Premier and Cabinet, https://www.recfit.tas.gov.au/_data/assets/pdf_file/0009/490896/CSIRO_Sea_Level_Rise-Allowance_Report_December_2016.pdf; Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

67 Australian Government, Bureau of Meteorology, Australian Climate Service, 2025, 'National Climate Risk Assessment Report', p 69 <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

68 Australian Climate Service, 2025, 'National Disasters and Emergency Management Technical Report', p 4, <https://www.arcgis.com/sharing/rest/content/items/e5a13d2c202e4390a98f07cbea29cf16/data>

69 Australian Government, 2023, 'Intergenerational Report 2023', <https://treasury.gov.au/sites/default/files/2023-08/p2023-435150.pdf>

70 Australian Government, n.d., 'Australia's first National Climate Risk Assessment', p 69, <https://www.acs.gov.au/pages/national-climate-risk-assessment>

71 Climate Change in Australia, Australian Government, n.d., 'Temperature Change', accessed 15 December 2025, <https://www.climatechangeinaustralia.gov.au/en/changing-climate/future-climate-scenarios/global-warming-levels/temperature-change/>

72 Climate Change in Australia, Australian Government, n.d., 'Temperature Change', accessed 15 December 2025, <https://www.climatechangeinaustralia.gov.au/en/changing-climate/future-climate-scenarios/global-warming-levels/temperature-change/>

[change/](#)

73 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

74 Sharon L. Campbell, Nicolas Borchers-Arriagada, Grant J. Williamson and Fay H. Johnson, 2021, 'Assessing mortality associated with heatwaves in the cool climate region of Tasmania, Australia', *The Journal of Climate Change and Health*, 17, May-June 2024, <https://www.sciencedirect.com/science/article/pii/S2667278224000051>

75 Libraries Tasmania, 2017, 'The Fire of '67', <https://libraries.tas.gov.au/slat/blog/the-fire-of-67/>; Langenberg, A., 2022, 'Black Tuesday 1967 bushfire legacy lives on in fire trail upgrade on Hobart's kunanyi/Mt Wellington', ABC News, 8 February 2022, <https://www.abc.net.au/news/2022-02-08/kunanyi-mt-wellington-fire-trail-upgrade-55-years-on-black-tues/100810500>

76 Government of Western Australia, Department of Primary Industries and Regional Development, 2016, 'Generalised Land Use of South West Western Australia', https://library.dpird.wa.gov.au/gis_maps/9/

77 Grose MR, Barnes-Keoghan I, Corney SP, White CJ, Holz GK, Bennett JB, Gaynor SM and Bindoff NL, 2010, 'General Climate Impacts Technical Report', Climate Futures for Tasmania, p 4, <https://climatefutures.org.au/wp-content/uploads/2023/05/Climate-Futures-General-Climate-Impacts-Full-Report.pdf>

78 Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

79 Grose MR, Barnes-Keoghan I, Corney SP, White CJ, Holz GK, Bennett JB, Gaynor SM and Bindoff NL, 2010, 'General Climate Impacts Technical Report', Climate Futures for Tasmania, p 4, <https://climatefutures.org.au/wp-content/uploads/2023/05/Climate-Futures-General-Climate-Impacts-Full-Report.pdf>

80 Projections for Hobart have been extrapolated out: ReCFIT, n.d., 'Local climate profile Hobart City Municipality', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0004/489829/Hobart_Climate_Profile.pdf

81 Grose MR, Barnes-Keoghan I, Corney SP, White CJ, Holz GK, Bennett JB, Gaynor SM and Bindoff NL, 2010, 'General Climate Impacts Technical Report', Climate Futures for Tasmania, p 42, <https://climatefutures.org.au/wp-content/uploads/2023/05/Climate-Futures-General-Climate-Impacts-Full-Report.pdf>

82 Adapted from tables 20 and 24: Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

83 Pinkard, L., Bruce, J., Battaglia, M., Matthews, S., Drew, D., Downes, G., Crawford, D., & Ottenschlaeger, M., 2014, "Adaptation strategies to manage risk in Australia's plantations", Forest & Wood Products Australia.

84 Andrew Colvin, Deloitte Touche Tohmatsu, 2024, 'Final Report Independent Review of Commonwealth Disaster Funding', the Colvin Review, <https://www.nema.gov.au/sites/default/files/2024-10/Independent%20Review%20of%20Commonwealth%20Disaster%20Funding%20-%20Final%20report%20-%20Medium%20Res.PDF>; Australian Climate Service, 2025, 'National Disasters and Emergency Management Technical Report', p 18, <https://www.arcgis.com/sharing/rest/content/items/e5a13d2c202e4390a98f07cbea29cf16/data>

85 Grose MR, Barnes-Keoghan I, Corney SP, White CJ, Holz GK, Bennett JB, Gaynor SM and Bindoff NL, 2010, 'General Climate Impacts Technical Report', Climate Futures for Tasmania, p 4, <https://climatefutures.org.au/wp-content/uploads/2023/05/Climate-Futures-General-Climate-Impacts-Full-Report.pdf>

86 Moore, G., 2022, 'Trees: Why they're our greatest allies against floods – but also

tragic victims', PreventionWeb, <https://www.preventionweb.net/news/trees-why-theyre-our-greatest-allies-against-floods-also-tragic-victims#:~:text=Water%2Dlogged%20soils%20have%20low,the%20trees%20are%20less%20stable>

87 Kathleen L. McInnes, Didier Monselesan, Julian O Grady, John Church and Xuebin Zhang, 2016, 'Sea-Level Rise and Allowances for Tasmania based on the IPCC AR5', Report for Tasmanian Department of Premier and Cabinet, https://www.recfit.tas.gov.au/_data/assets/pdf_file/0009/490896/CSIRO_Sea_Level_Rise-Allowance_Report_December_2016.pdf; Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

88 See, for example, R. Warren, J. Price, E. Graham, N. Forstenhaeusler & J. Vanderwal, 'The projected effect on insects, vertebrates, and plants of limiting global warming to 1.5°C rather than 2°C', *Science* 360, 791-795(2018). DOI:10.1126/science.aar3646

89 IPCC (2018), 'Summary for Policymakers'. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 3-24. <https://doi.org/10.1017/9781009157940.001>

90 Australian Government, n.d., 'Australia's first National Climate Risk Assessment', p 69, <https://www.acs.gov.au/pages/national-climate-risk-assessment>

91 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

92 Climate Change in Australia, Australian Government, n.d., 'Temperature Change', accessed 15 December 2025, <https://www.climatechangeinaustralia.gov.au/en/changing-climate/future-climate-scenarios/global-warming-levels/temperature-change/>

93 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

94 The Superpower Institute, n.d., 'The Case for Pricing Pollution', https://www.superpowerinstitute.com.au/resource/file-81777a577b8880161433b1a35847a9b532244a5b-pdf/TSI_The-Case-for-Pricing-Pollution_Full-Report_Jan29.pdf

95 Libraries Tasmania, 2017, 'The Fire of '67', <https://libraries.tas.gov.au/slat/blog/the-fire-of-67/>; Langenberg, A., 2022, 'Black Tuesday 1967 bushfire legacy lives on in fire trail upgrade on Hobart's kunanyi/Mt Wellington', ABC News, 8 February 2022, <https://www.abc.net.au/news/2022-02-08/kunanyi-mt-wellington-fire-trail-upgrade-55-years-on-black-tues/100810500>

96 IPCC, 2023, 'Summary for Policymakers' in: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001

97 IPCC, 2023, 'Summary for Policymakers' in: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-

9789291691647.001

98 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

99 Fox-Hughes P, Harris RMB, Lee G, Jabour J, Grose MR, Remenyi TA and Bindoff NL, 2015, 'Future Fire Danger – The Summary & Technical Report', Climate Futures for Tasmania, https://www.wace.aappartnership.org.au/wp-content/uploads/2015/12/Report_CFT_Future-Fire-Technical-Report_2015_web.pdf

100 Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

101 Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

102 Pinkard, L., Bruce, J., Battaglia, M., Matthews, S., Drew, D., Downes, G., Crawford, D., & Ottenschlaeger, M., 2014, "Adaptation strategies to manage risk in Australia's plantations", Forest & Wood Products Australia.

103 Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

104 Morton, A., 2026, 'Australia's grid now relies on renewable energy as much as coal. Those who doubted it look foolish', The Guardian, 20 January 2026, <https://www.theguardian.com/environment/2026/jan/31/australias-grid-now-relies-on-renewable-energy-as-much-as-coal-those-who-doubted-it-look-foolish>

105 Commonwealth of Australia, 2024, 'National Climate Risk Assessment: First pass assessment report', <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>; Australian Government, Bureau of Meteorology, Australian Climate Service, 2025, 'National Climate Risk Assessment Report', p 69, <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

106 Commonwealth of Australia, 2024, 'National Climate Risk Assessment: First pass assessment report', <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>; Australian Government, Bureau of Meteorology, Australian Climate Service, 2025, 'National Climate Risk Assessment Report', p 69, <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

107 Commonwealth of Australia, 2024, 'National Climate Risk Assessment: First pass assessment report', <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>; Australian Government, Bureau of Meteorology, Australian Climate Service, 2025, 'National Climate Risk Assessment Report', p 69, <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

108 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

109 Grose MR, Barnes-Keoghan I, Corney SP, White CJ, Holz GK, Bennett JB, Gaynor SM and Bindoff NL, 2010, 'General Climate Impacts Technical Report', Climate Futures for Tasmania, p 4, <https://climatefutures.org.au/wp-content/uploads/2023/05/Climate-Futures-General-Climate-Impacts-Full-Report.pdf>; Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

110 Kathleen L. McInnes, Didier Monselesan, Julian O Grady, John Church and

Xuebin Zhang, 2016, 'Sea-Level Rise and Allowances for Tasmania based on the IPCC AR5', Report for Tasmanian Department of Premier and Cabinet, https://www.recfit.tas.gov.au/_data/assets/pdf_file/0009/490896/CSIRO_Sea_Level_Rise_Allowance_Report_December_2016.pdf; Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

112 Australian Government, Bureau of Meteorology, Australian Climate Service, 2025, 'National Climate Risk Assessment Report', p 69, <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

113 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', <https://www.acs.gov.au/documents/fadb05a9fa254835b840db73383910d7/about>

114 Sharon L. Campbell, Nicolas Borchers-Arriagada, Grant J. Williamson and Fay H. Johnson, 2021, 'Assessing mortality associated with heatwaves in the cool climate region of Tasmania, Australia', The Journal of Climate Change and Health, 17, May-June 2024, <https://www.sciencedirect.com/science/article/pii/S2667278224000051>

115 Libraries Tasmania, 2017, 'The Fire of '67', <https://libraries.tas.gov.au/slat/blog/the-fire-of-67/>; Langenberg, A., 2022, 'Black Tuesday 1967 bushfire legacy lives on in fire trail upgrade on Hobart's kunanyi/Mt Wellington', ABC News, 8 February 2022, <https://www.abc.net.au/news/2022-02-08/kunanyi-mt-wellington-fire-trail-upgrade-55-years-on-black-tues/100810500>

116 IPCC, 2023, 'Summary for Policymakers' in: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001

117 IPCC, 2023, 'Summary for Policymakers' in: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001

118 Australian Government, Australian Climate Service, 2025, 'Australia's Future Climate and Hazards Report', <https://www.acs.gov.au/documents/fadb05a9fa254835b840db83910d7/about>

119 Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF; Grose MR, Barnes-Keoghan I, Corney SP, White CJ, Holz GK, Bennett JB, Gaynor SM and Bindoff NL, 2010, 'General Climate Impacts Technical Report', Climate Futures for Tasmania, p 4, <https://climatefutures.org.au/wp-content/uploads/2023/05/Climate-Futures-General-Climate-Impacts-Full-Report.pdf>

120 Fox-Hughes P, Harris RMB, Lee G, Jabour J, Grose MR, Remenyi TA and Bindoff NL, 2015, 'Future Fire Danger – The Summary & Technical Report', Climate Futures for Tasmania, https://www.wace.aappartnership.org.au/wp-content/uploads/2015/12/Report_CFT_Future-Fire-Technical-Report_2015_web.pdf

121 Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

122 Pinkard, L., Bruce, J., Battaglia, M., Matthews, S., Drew, D., Downes, G., Crawford, D., & Ottenschlaeger, M., 2014, "Adaptation strategies to manage risk in Australia's plantations", Forest & Wood Products Australia.

123 Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

124 Commonwealth of Australia, 2024, 'National Climate Risk Assessment: First pass assessment report', <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

125 Commonwealth of Australia, 2024, 'National Climate Risk Assessment: First pass assessment report', <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

126 Commonwealth of Australia, 2024, 'National Climate Risk Assessment: First pass assessment report', <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

127 Commonwealth of Australia, 2024, 'National Climate Risk Assessment: First pass assessment report', <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

128 Commonwealth of Australia, 2024, 'National Climate Risk Assessment: First pass assessment report', <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

129 Commonwealth of Australia, 2024, 'National Climate Risk Assessment: First pass assessment report', <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

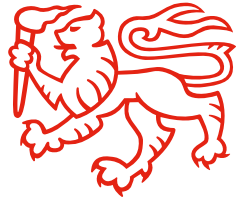
130 Grose MR, Barnes-Keoghan I, Corney SP, White CJ, Holz GK, Bennett JB, Gaynor SM and Bindoff NL, 2010, 'General Climate Impacts Technical Report', Climate Futures for Tasmania, p 4, <https://climatefutures.org.au/wp-content/uploads/2023/05/Climate-Futures-General-Climate-Impacts-Full-Report.pdf>; Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

131 Kathleen L. McInnes, Didier Monselesan, Julian O Grady, John Church and Xuebin Zhang, 2016, 'Sea-Level Rise and Allowances for Tasmania based on the IPCC AR5', Report for Tasmanian Department of Premier and Cabinet, https://www.recfit.tas.gov.au/_data/assets/pdf_file/0009/490896/CSIRO_Sea_Level_Rise_Allowance_Report_December_2016.pdf; Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

132 Deloitte, 2024, 'Tasmania's Risk Assessment for Climate Change 2024: Technical Report', https://www.recfit.tas.gov.au/_data/assets/pdf_file/0003/552972/Tasmanias-Risk-Assessment-for-Climate-Change-2024-Technical-Report.PDF

133 Australian Government, Bureau of Meteorology, Australian Climate Service, 2025, 'National Climate Risk Assessment Report', p 69, <https://www.dcceew.gov.au/sites/default/files/documents/national-climate-risk-assessment-first-pass-assessment-report-2024.pdf>

UNIVERSITY of
TASMANIA



— Tasmanian Policy Exchange

