



VICTORIA'S CLIMATE CHANGE STRATEGY

Acknowledgement

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.

Acknowledgements

Design cee.Design – carmel@cee.design.co

Editor Tom Ormonde Media – ormonde.tom@gmail.com

Images Cover Randal – stock.adobe.com, P. 6 Riccardo Trimeloni – unsplash.com, P. 8 Nazrin B-va – unsplash.com, P. 15 Alexis – unsplash.com
P. 16, 43 Pat Whelen – unsplash.com, P. 18 Henryk Sadura – stock.adobe.com, P. 24 Michael Evans – stock.adobe.com, P. 26 Jenny Clow – unsplash.com
P. 30 Jannes Glas – unsplash.com, P. 34 Kevin Bosc – unsplash.com, P. 44 Amos Bar Zeev – unsplash.com

© The State of Victoria Department of Environment, Land, Water and Planning, May 2021.



This work is licensed under a Creative Commons Attribution 4.0 International licence. You are free to re-use the work under that licence, on the condition that you credit the State of Victoria as author. The licence does not apply to any images, photographs or branding, including the Victorian Coat of Arms, the Victorian Government logo and the Department of Environment, Land, Water and Planning (DELWP) logo. To view a copy of this licence, visit creativecommons.org/licenses/by/4.0/

ISBN 978-1-76105-409-9 (pdf/online/MS word)

Disclaimer

This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

This instrument has been made to give effect to the requirements in Division 1 of Part 5 of the *Climate Change Act 2017*.

Accessibility

If you would like to receive this publication in an alternative format, please telephone the DELWP Customer Service Centre on 136 186, or email customer.service@delwp.vic.gov.au, or via the National Relay Service on 133 677, www.relayservice.com.au
This document is also available on the internet at www.delwp.vic.gov.au

Our commitment to climate action



The Hon. James Merlino MP
Acting Premier
of Victoria



The Hon. Lily D'Ambrosio MP
Minister for Energy, Environment
and Climate Change
Minister for Solar Homes

Our state and our nation faced unprecedented challenges in 2020. First came a brutal bushfire season, and then the global coronavirus (COVID-19) pandemic.

As tough as last year was, we also saw firsthand the power of our collective action. What it is possible to achieve when we work together.

Now as we stare down the challenge of climate change, we bring that same understanding.

Victoria's Climate Change Strategy sets out our state's plan for further reducing emissions, while at the same time creating new opportunities and new jobs.

It also brings other benefits too – saving Victorians money, ensuring a more reliable energy network and setting Victoria up for success, now and into the future.

We see Victorians want this change.

We see your aspiration.

We see your action.

And we share your ambition.

Together, we want to build a cleaner, stronger and fairer Victoria as we work towards our goal of net-zero emissions.

Contents

Securing Victoria's net-zero emissions future	05
1: A clean energy economy	18
2: Innovation for the future	24
3: Resilient farms and forests	30
4: Climate smart businesses and communities	34
5: A climate resilient Victoria	40
Next steps	45



Securing Victoria's net-zero emissions future

We are taking strong action on climate change

We have introduced world-leading legislation, Victoria's *Climate Change Act 2017*, which cements our net-zero emissions goal in law and establishes a comprehensive framework to get there while we also plan for and adapt to our changing climate. We have also set ambitious renewable energy targets and comfortably achieved both our emissions reduction and renewable energy targets for 2020.

We will achieve a net-zero emissions Victoria by 2050

To avoid the worst effects of climate change, the international Paris Agreement aims to limit the rise in global average temperature to between 1.5 and 2 degrees Celsius. To help achieve this goal, Victoria – along with many governments around the world – is committed to net-zero emissions by 2050.

We are also committed to safeguarding Victoria from the future effects of climate change with long-term investments in the built and natural environments to improve resilience and support adaptation.

Our action also supports opportunity, helping to create new jobs and investment for Victoria.

This Strategy sets out our current responses to climate change and our next steps

We will reduce emissions while creating jobs, stimulating innovation and cutting costs for all Victorians with:

- / Ambitious yet achievable emissions reduction targets for 2025 and 2030
- / Actions that reduce emissions now and lay the foundations for future emissions reductions
- / Priority measures to build Victoria's climate resilience.

New and ambitious targets charting our course to net-zero emissions

Emissions targets drive action, attract talent and inspire innovation

Targets provide a clear roadmap for governments, businesses and households to make informed decisions, adopt low-emissions technologies and practices, and plan and invest for the future.

Building on our success so far, the Victorian Government has set ambitious, yet achievable new targets in this Strategy to reduce the state's emissions from 2005 levels – by 28–33 per cent by 2025, and 45–50 per cent by 2030 – on the way to net-zero emissions by 2050.

The targets are grounded in science while also considering the day-to-day needs of Victorian businesses and the community. They reflect what can be achieved through Victorian Government and community action. And they will maintain Victoria's position as a climate leader nationally and internationally.

In setting these targets, we have been guided by advice from the [Independent Expert Panel on Interim Emissions Reduction Targets for Victoria](#). The Panel recognised that meeting the higher ends of targets would require strong action at both state and Commonwealth levels and continued technology development.

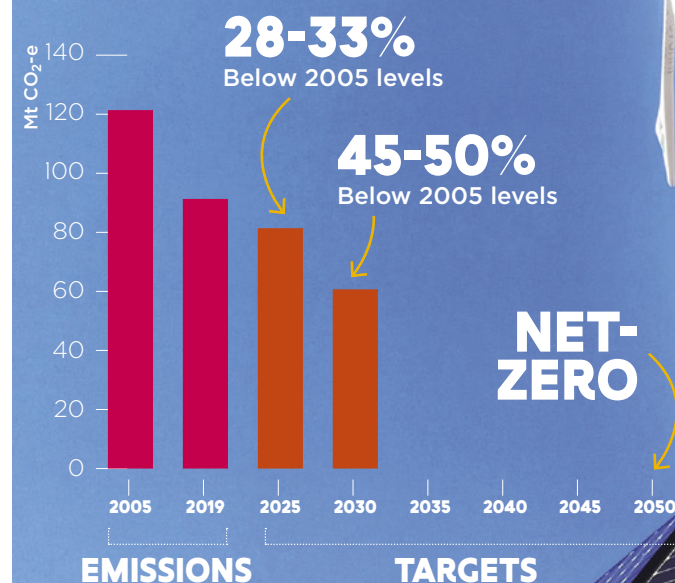
Victoria will continue to call for stronger Commonwealth climate action as we strive to reduce emissions even further.

We will also continue to map and refine our pathway to net-zero with five-yearly targets, each stronger than the last. Our next target is for 2035. It will be set in 2023, as required by Victoria's *Climate Change Act 2017*.

Achieving our interim targets – and, ultimately net-zero emissions – will require action across all sectors of the economy by governments, businesses and the community. To help coordinate this action, the Government has prepared emissions reduction pledges for each emissions sector for 2021–2025 – the first in a progression of five-yearly pledges required under the *Climate Change Act 2017*.

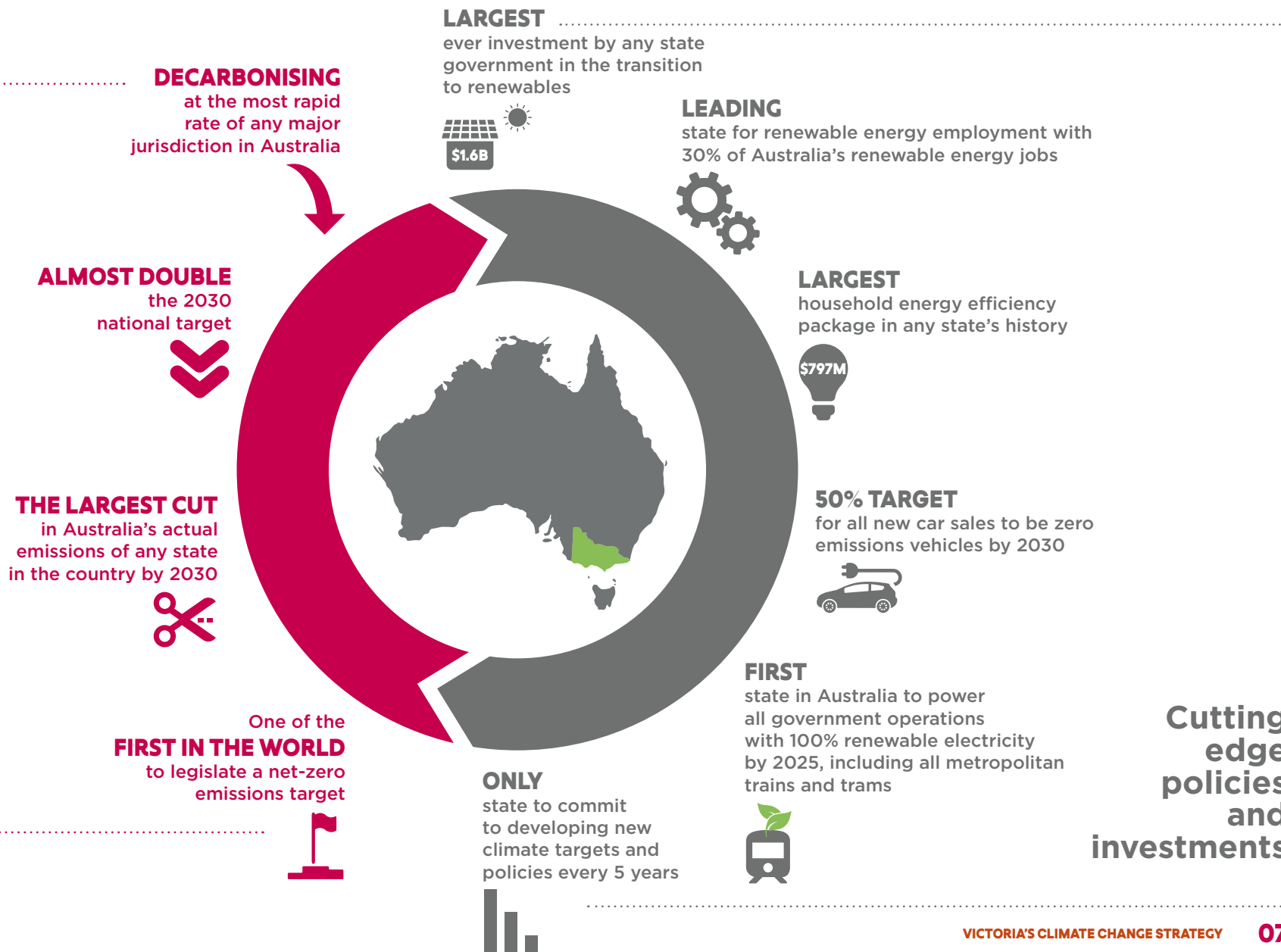
Targets to reduce the state's emissions from 2005 levels

28-33%
by 2025, and
45-50%
by 2030



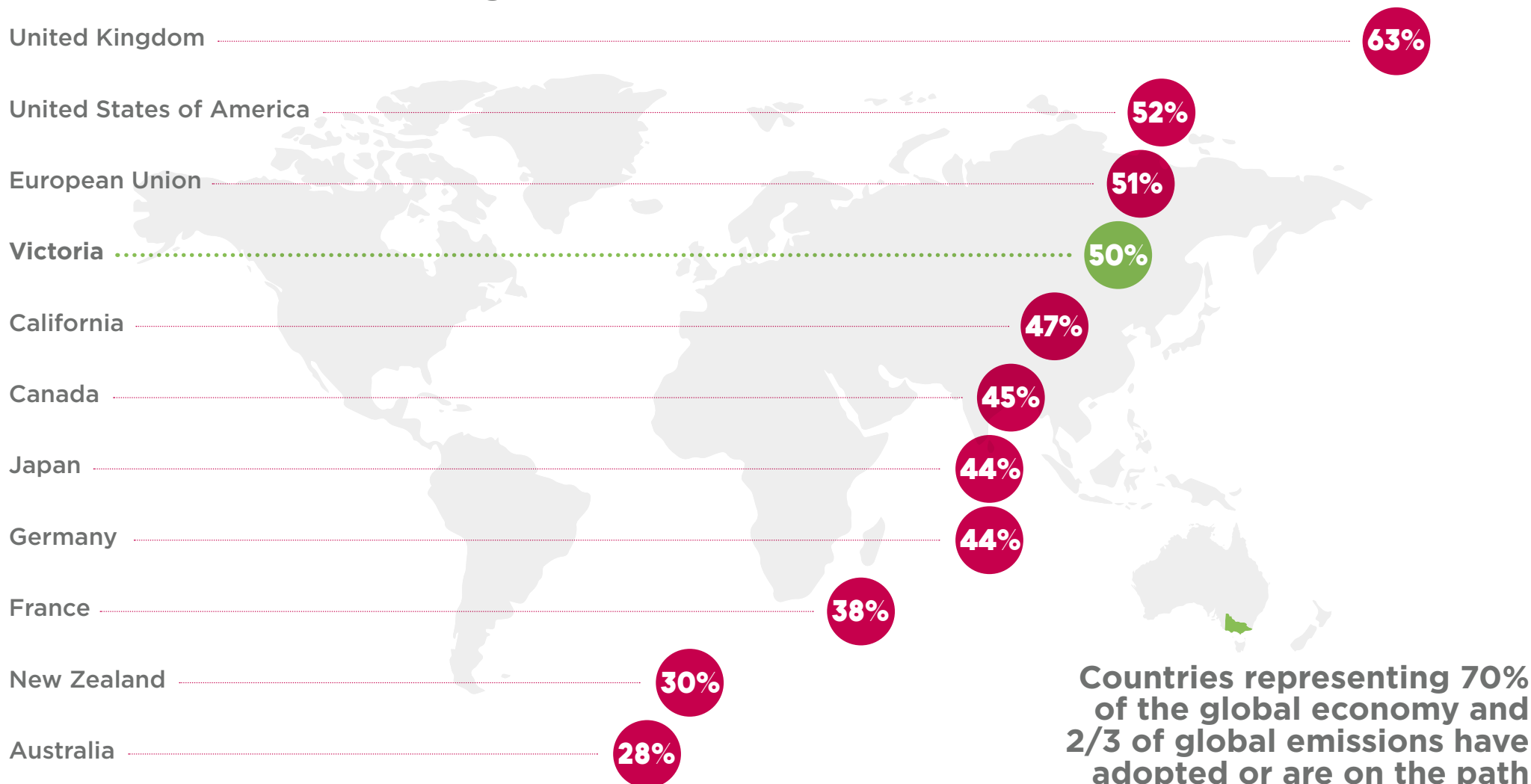
Victoria leads the nation on climate action

Victoria's ambitious emissions reduction targets



The world is acting and Victoria is among the leaders

2030 emissions reduction targets



Countries representing 70% of the global economy and 2/3 of global emissions have adopted or are on the path towards net-zero emissions

All targets have been converted to common 2005 emissions baseline for comparison.
For jurisdictions with a target range, the upper bound is presented here.

Climate change will have real impacts for Victorians

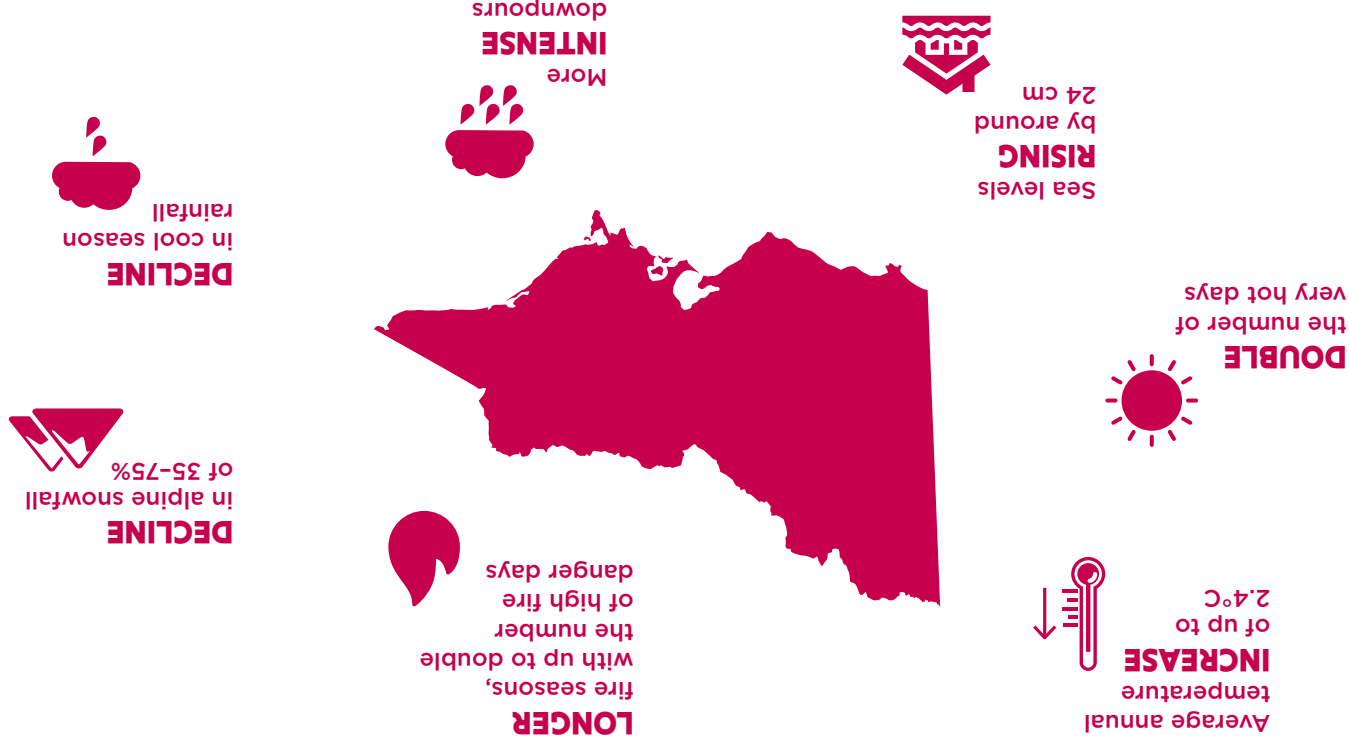
Victoria's climate has changed

INCREASE Temperature of 1.2°C since 1910

DECREASE in average rainfall

INCREASE in fire danger in spring

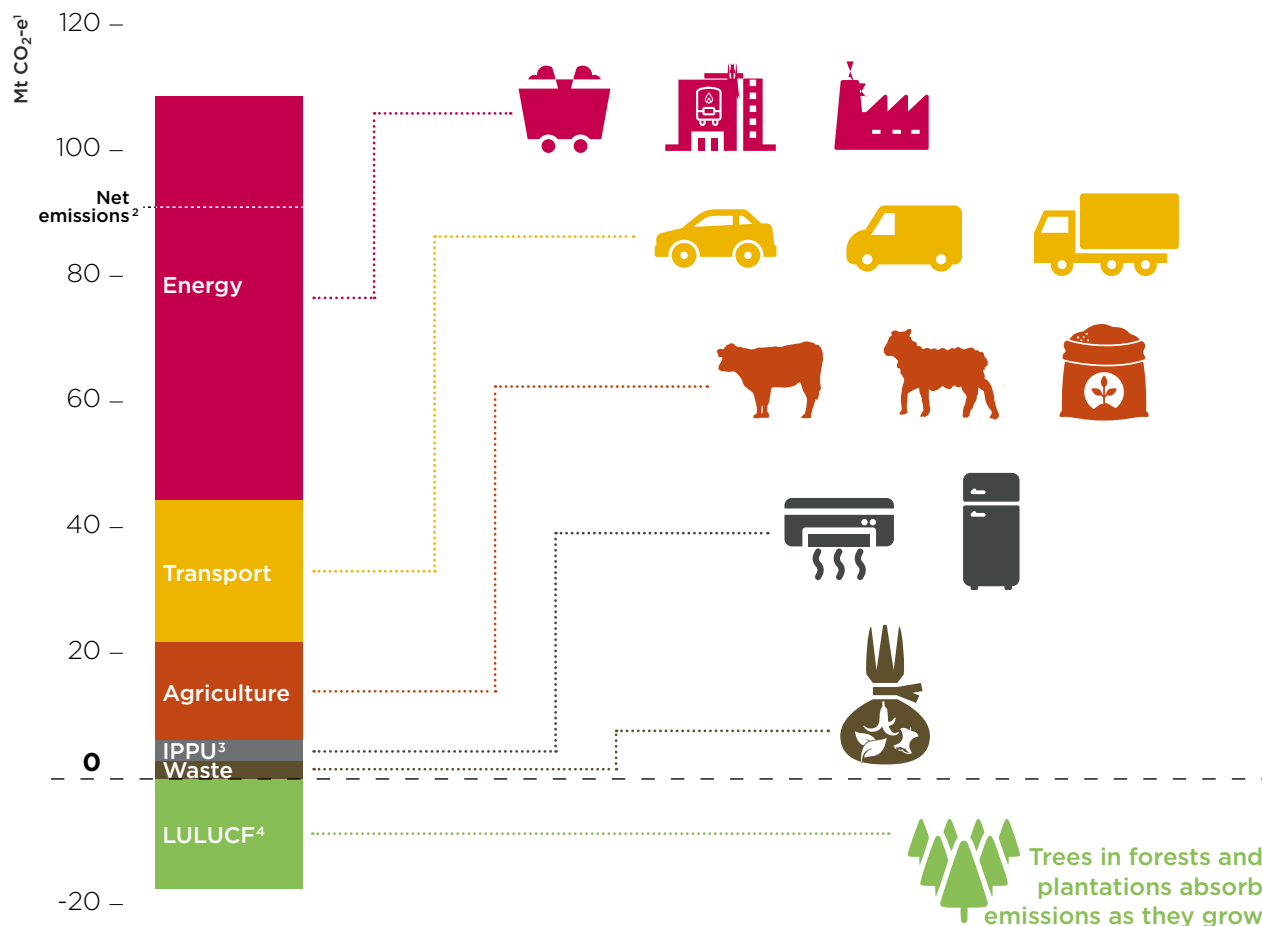
If global emissions continue to increase, in the 2050s Victoria may experience...



Under high emissions, compared to 1986-2005. Updated from Victoria's Climate Science Report 2019

Acting globally now will avert the worst impacts of climate change

Where Victoria's emissions come from



Victoria's greenhouse gas emissions by emissions sector in 2019

¹ Million tonnes of carbon dioxide equivalent emissions

² Victoria's net emissions are total emissions less the emissions absorbed in the LULUCF sector

³ Industrial processes and product use

⁴ Land use, land use change and forestry

Opportunities to cut our emissions

Victoria's greenhouse gas emissions are generated by various activities across our economy. Although the energy sector is the largest source of emissions, opportunities exist to reduce emissions across other sectors too. We can also take carbon dioxide out of the atmosphere in the land use, land use change and forestry sector.

Our energy policies will drive emissions reductions not just in Victoria but across the National Electricity Market – by reducing the amount of electricity we need to import from interstate and therefore reducing the amount of fossil fuel-based electricity generated by other states. By reducing emissions in other states as well as Victoria, we are further contributing to global action on climate change.

Victoria's net emissions were 91 million tonnes CO₂-e in 2019

Actions to achieve our targets

To help meet its targets, the Victorian Government has prepared emissions reduction pledges for each sector

Energy pledge

This pledge will accelerate Victoria's transition to a clean and efficient energy future. 50 per cent of Victoria's electricity will come from renewable sources by 2030. We will have greener, more comfortable homes and buildings, and will benefit from reduced energy costs and growth in emerging industries. 778,500 households will receive rebates for solar panels, solar hot water systems and batteries, and 15,000 small businesses will receive rebates for solar panels.



Land use, land use change and forestry pledge

This pledge reflects that from 2030 commercial native timber harvesting in Victoria's state forests will cease – protecting an area of native forest greater than the landmass of Tasmania. The pledge will also lead to restoration of degraded landscapes and the planting of up to 30 million trees, helping to remove emissions from the atmosphere.



Agriculture pledge

This pledge will deliver foundational actions that will ensure farmers are preparing to achieve emissions reductions towards 2030. New technologies and practices will be tested for the Victorian context, and farmers will be supported to use information and tools that will help to realise emissions reduction opportunities on-farm.



Waste pledge

This pledge will halve the amount of organic waste going to landfill by 2030 while supporting emerging waste and recycling industries and economic opportunities across the state.



Industrial processes and product use pledge

This pledge will improve the maintenance and management of refrigeration and air conditioning equipment to reduce leakage of refrigerant gases.



Transport pledge

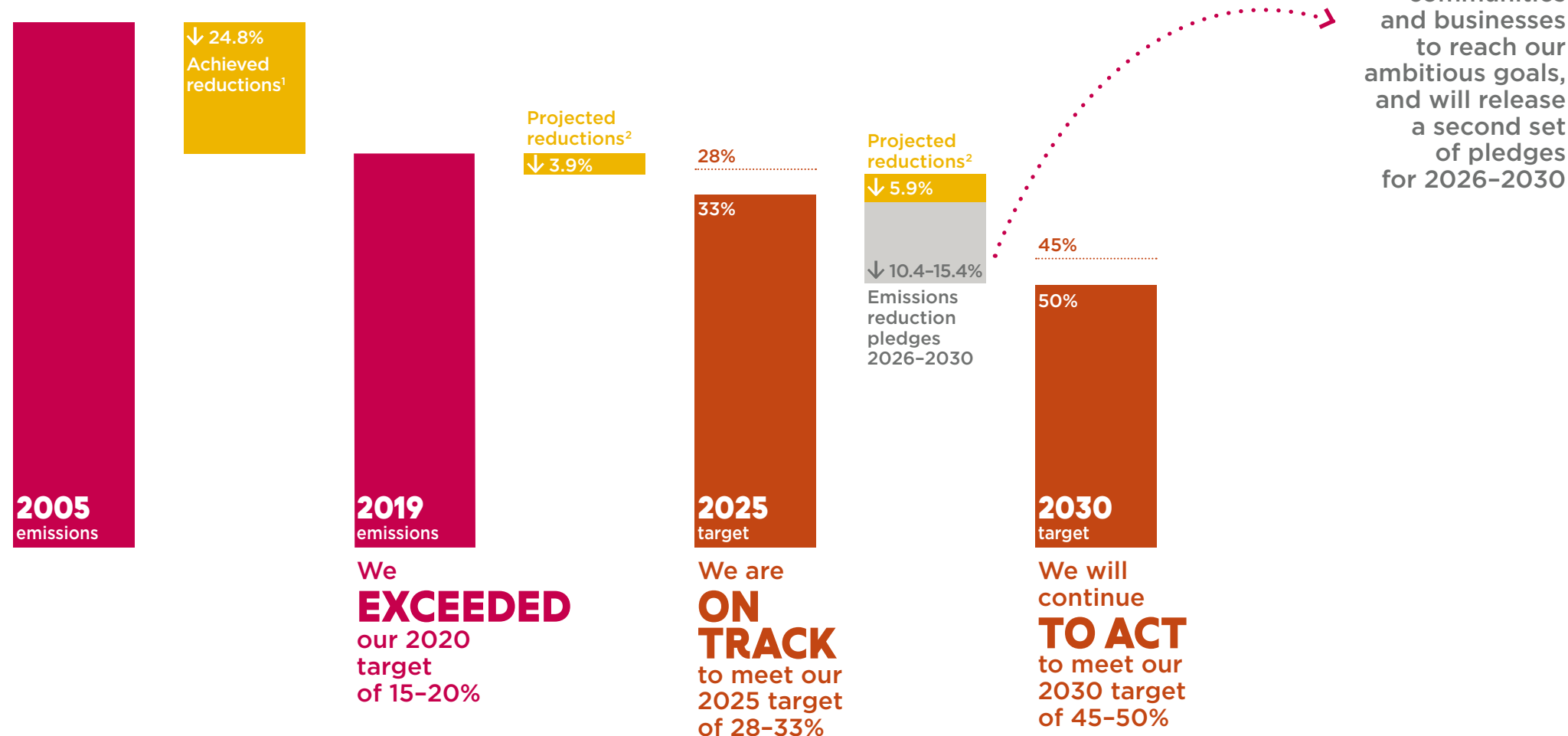
This pledge will accelerate the transition to zero emissions vehicles (ZEVs) by setting a 50 per cent ZEV target for all new light vehicle sales by 2030. A \$100 million package of new policies and programs will ensure Victoria is a leader in the adoption of ZEVs in Australia and position the state to take full advantage of the emerging global shift towards this new technology.



Whole of Victorian Government pledge

This pledge will see all Victorian Government operations – including schools, hospitals and metropolitan trains and trams – powered by 100 per cent renewable electricity by 2025. We will also cut emissions with more energy efficient buildings and infrastructure, and bring 400 zero emissions vehicles into the Government fleet by 2023.

Progress towards our targets



¹ Achieved reductions: Latest official emissions data for 2019. Data for 2020 will be published in 2022.

² Projected reductions: Including reductions from emission reduction pledges for 2021-2025 and actions taken independently by Victorian households and businesses. Emissions reduction pledges will deliver estimated reductions of 3.2 Mt CO₂-e in 2025 and 6.1 Mt CO₂-e in 2030.

Victoria in 2030

By 2030, Victoria will have reduced emissions by 45 to 50 per cent below 2005 levels. Our policies to cut emissions will mean by 2030:



Clean energy

- / 50 per cent of Victoria's electricity sourced from renewables.
- / All Government operations, including schools, hospitals, metropolitan trains and trams will be powered by 100 per cent renewable electricity from 2025.



Health and wellbeing

- / Improved community health and wellbeing due to less pollution.



Homes

- / All new homes meeting at least 7-Star energy efficiency standards.



Agriculture

- / Farmers to have on-farm climate action plans.



Jobs

- / Tens of thousands of Victorians working in clean industries.



Native forests

- / Native forests protected following the end of timber harvesting.



Waste

- / All households to have organic waste recycling services.
- / Waste generation to be down 15 per cent per person.



Trains and buses

- / All new public transport buses to be zero emissions from 2025.
- / Expanded public transport system with major projects like the Metro Tunnel.



Zero emissions vehicles

- / Zero emissions vehicles to make up 50 per cent of new light vehicle sales.



Climate action creates opportunities

Our plan creates jobs, assists economic recovery and cuts emissions

Our plentiful renewable energy resources and highly-skilled workforce will attract investment and new industries to the state and create new export opportunities. This will give Victoria an edge in the zero-emissions future, with new industries – some we can't even imagine yet – supporting jobs growth in the decades ahead.

Climate action will also help our immediate economic recovery. Research suggests a green recovery will create more jobs sooner and deliver strong social benefits over the long term. Investments in clean energy and energy efficiency also reduce energy costs for Victorian households and businesses.

Climate action will also help protect our precious flora and fauna and improve the health and wellbeing of our community by restoring landscapes and reducing pollution of our water, air and soil.

Our climate action will deliver jobs for Victorians, with many in regional Victoria, including

4,000

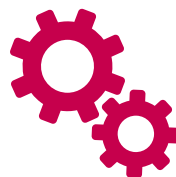
jobs supported by our household energy efficiency package

24,400

jobs from achieving our transition to 50 per cent renewable electricity

3,900

jobs created by *Recycling Victoria*



Victoria has already shown how to achieve economic growth while reducing emissions

From 2005 to 2019

Economic growth
↑ **43.4%**

Jobs
↑ **38.0%**

Emissions
↓ **24.8%**

We can already see the benefits of climate action

In 2019, Victoria's emissions fell to **24.8%** below 2005 levels, exceeding our 2020 target for a 15-20 per cent reduction

More than **25%** of Victoria's electricity comes from renewable sources – supplying clean energy and lowering electricity prices for households and businesses

Victoria is the leading state for renewable energy employment in Australia, with **30%** of Australia's renewable energy jobs

277K households improved their energy efficiency through the Victorian Energy Upgrades program in 2019 – saving on average \$110 per year

Melbourne trams are powered by **100%** solar electricity – providing clean travel options for city commuters

Victorian landfill sites are capturing and combusting landfill greenhouse gases, with emissions cut by **43%** since 2005

Our plan cuts emissions and builds resilience

We are moving towards a net-zero emissions and climate resilient future

This Strategy brings together the actions from our emissions reduction pledges, and sets out our priorities to build resilience in future decades.

We are focusing on solutions that are cost effective and available at scale now, as well as building our capacity to reduce emissions in the future.

We also recognise the critical role that Victorian businesses and households have to play in reducing the state's emissions, and are providing essential support for these efforts.

We are making significant investments in climate action

In the last year alone, we have committed almost \$2 billion to accelerate Victorian climate action and invest in our clean energy future. This includes the \$1.6 billion clean energy package announced in the *Victorian Budget 2020–21*, \$100 million to accelerate the uptake of Zero Emissions Vehicles, \$92 million for land restoration and carbon farming initiatives, and almost \$20 million to support the agriculture sector response to a changing climate.

This funding is on top of the \$515 million committed to transform waste and recycling, and the \$110 million Gippsland Plantations Investment Program.

These commitments are expected to result in Victorian households and businesses saving around \$13 billion in energy costs by 2030.

Creating new jobs and new opportunity

Our transition to a net-zero emissions, climate resilient economy means doing things differently. Our Climate Change Strategy embraces the opportunities and addresses the challenges of change, ensuring no Victorian is left behind.

We will invest in the skills and industries required for a clean energy economy, and build the capacity of Victorian industries to adopt low-emissions technologies and practices.

We will ensure all Victorians can reap the benefits of a net-zero emissions economy – for example, by supporting energy efficient construction and investing in making the homes of our most vulnerable community members energy efficient.

We are also committed to supporting workers and communities linked to industries in transition – aiding the growth of local businesses, enabling regional communities to benefit from new economic opportunities, and helping workers to retrain and secure new jobs.

We are also reducing the barriers to climate change adaptation so that all communities and businesses can build their resilience to face our changing climate.

Almost
\$2B
for climate action
and our clean
energy future

Victoria's five-point plan

1: A clean energy economy

The energy sector is Victoria's biggest source of emissions. Our transition away from fossil fuels to renewable energy is already well underway. This transition is reducing emissions, cutting energy costs for households and businesses, creating thousands of jobs and ensuring we have an affordable and reliable energy system. Our actions will support:

- / Transformation of the electricity system with renewable energy
- / Building greener homes and buildings
- / Expanding skills and jobs for Victorians.



2: Innovation for the future

We are investing in technology trials, pilot schemes and other planning initiatives to enable us to capture the opportunities of future zero-emissions technologies and practices as they emerge. Our actions will support:

- / Next-generation energy, including batteries and offshore wind power
- / Decarbonising gas use – including switching to electricity and developing the renewable hydrogen industry
- / Transitioning to more zero emissions vehicles.



3: Resilient farms and forests

Investing in Victoria's natural environment will strengthen our agricultural industry and protect our plants and animals – as well as reduce emissions. Our actions will support:

- / Revitalising and protecting our lands and forests
- / Researching and piloting new solutions for agriculture
- / Farmers to take up new technologies and practices that reduce emissions.



4: Climate smart businesses and communities

We are empowering Victorians to reduce emissions by supporting businesses and communities to adopt more efficient practices and technologies that will help us all to thrive in a net-zero emissions future. Our actions will support:

- / Energy efficiency and productivity for businesses
- / Lower emissions from waste and the creation of a circular economy
- / Community investment in renewable energy
- / Improvements to public transport and cycling and walking paths.



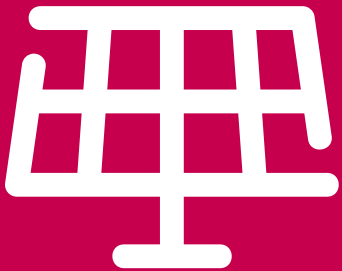
5: A climate resilient Victoria

As the climate changes, we need to strengthen our ability to withstand and recover from extreme weather events – by protecting landscapes, communities and ecosystems, and by supporting jobs in emerging and changing industries. Our actions will support:

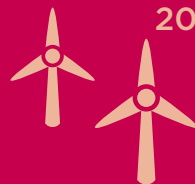
- / Efforts to address current climate change impacts
- / Reduced barriers to adaptation
- / The laying of foundations for transformational adaptation.



1: A clean energy economy



Globally, installed
wind and solar
capacity will
exceed gas by
2023 and coal by
2024



Reliable

Reliable, affordable, clean energy is critical to a strong economy. The Government is investing in a clean energy future to create jobs, support businesses and households and attract new industry to Victoria.

Renewable

Renewable energy is emissions free and low cost. It is an obvious choice to replace our ageing coal-fired generators, while ensuring that businesses and households continue to have access to the energy they need. Renewable energy will also help us decarbonise our transport and industrial sectors as they switch from burning fossil fuels to using clean electricity.

Affordable

Improving energy efficiency in buildings through upgrades such as smart meters, smart thermostats and insulation does much more than reduce emissions. It also cuts energy bills and improves the comfort of our homes and offices.

Creating jobs

A clean energy economy creates jobs. Renewable energy and energy efficiency programs have already created thousands of jobs across the state – many in regional Victoria – and will create thousands more.



Harnessing Victoria's renewable energy resources

Transforming Victoria's electricity sector

Renewable energy will play a key role in achieving our 2050 net-zero emissions goal. With over two-thirds of Victoria's emissions coming from the energy sector, renewable energy provides the largest opportunity to cut our emissions. The transformation of the electricity sector from coal-fired power to renewables is already well underway.

In 2014, renewable energy only made up around 10 per cent of Victoria's energy generation. In 2020, 26.6 per cent of the electricity generated in Victoria came from renewable sources, comfortably exceeding our 2020 target of 25 per cent. We have set a 40 per cent renewable electricity target for 2025 and a 50 per cent target for 2030.

The legislated [Victorian Renewable Energy Targets](#) will stimulate new investments in large-scale solar and wind projects and create thousands of jobs, many of them in regional Victoria. This will provide flow-on benefits for supply chains, related services and local communities. It will help expand the skills of the clean energy workforce and encourage uptake of new energy technologies.

To support the achievement of these targets, the Victorian Government will source 100 per cent of its electricity from renewable sources by 2025. This includes electricity used in Victorian public schools and hospitals, and to power the metropolitan train and tram networks.

The Victorian Government is developing the second Victorian Renewable Energy Target (VRET2) auction process to boost the state's renewable energy generation by at least 600 megawatts, which will contribute to the legislated targets. VRET2 is expected to attract more than \$1 billion in investment.

This boost in renewable energy generation will be enough to power every public hospital and school in Victoria, Melbourne's train network and a range of other Government infrastructure and services.

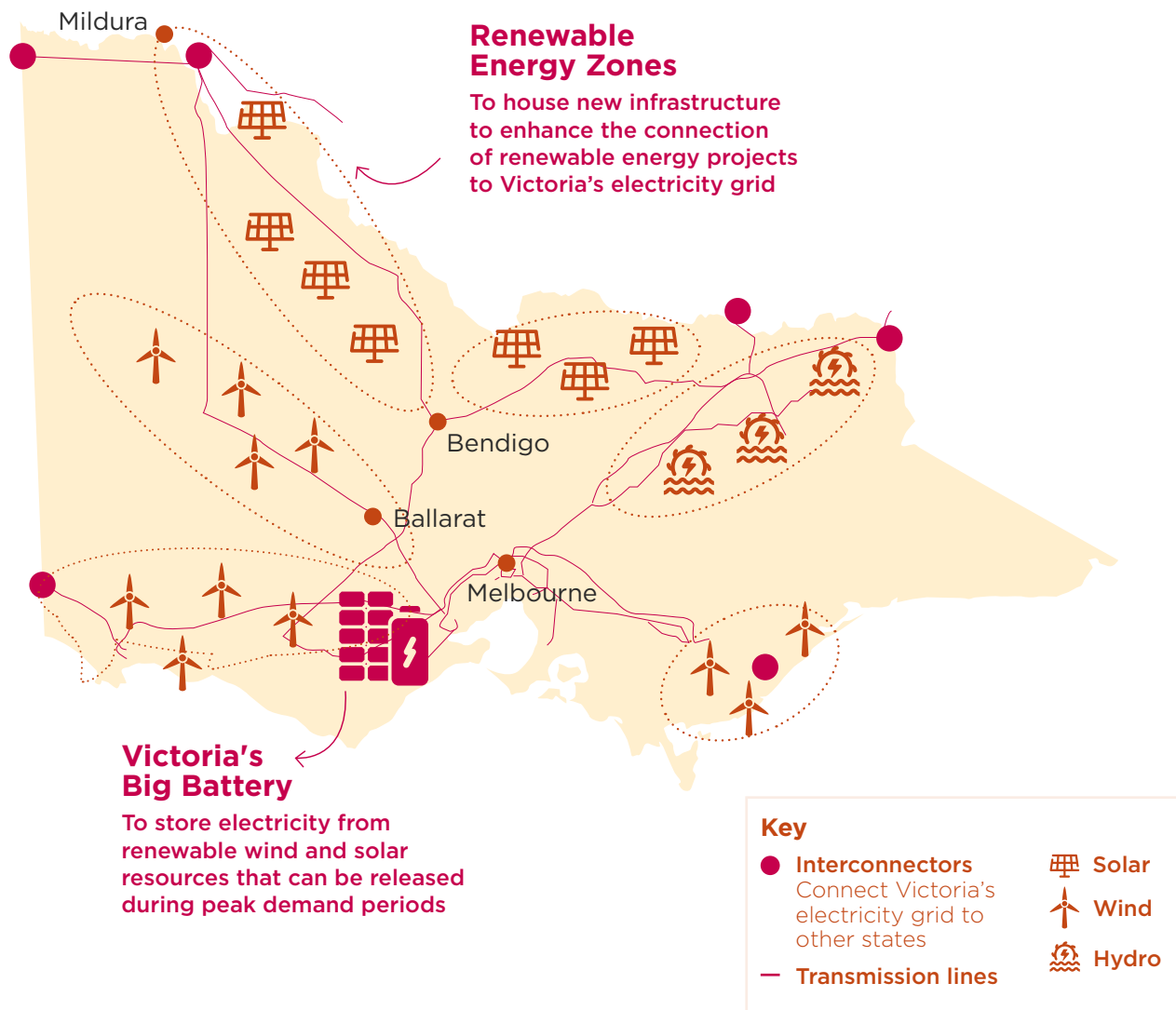
The Government is also investing \$86 million to expand the \$1.3 billion [Solar Homes program](#) and provide additional battery rebates for households, and to extend solar panel rebates to small businesses through a new Solar for Business Program. These programs will support 778,500 households and 15,000 businesses to install small-scale renewable energy and save hundreds of dollars on their energy bills each year.

Renewable energy presents the greatest and most immediate opportunity to propel Victoria to net-zero emissions



**By 2030,
50% of electricity
generated in Victoria
will be sourced
from renewables**

BUILDING THE NEXT GENERATION ELECTRICITY GRID



Historic investment in electricity grid infrastructure

To support the renewable energy investment required for our energy transition, we are upgrading Victoria's electricity grid to give it the capacity to transmit more renewable energy and to ensure it can withstand future climate change impacts – including more high-demand days during summer.

The Victorian Government has commenced work to establish six Renewable Energy Zones (REZ) in regional Victoria with abundant solar and wind resources. The program will be backed by the \$540 million REZ Fund which will be used to invest in critical infrastructure to strengthen and modernise Victoria's transmission grid to support a growing level of renewable generation. This \$540 million is more than the investments being made by New South Wales and Queensland combined. The Government will also establish VicGrid, a new body to support the development of Victoria's Renewable Energy Zones. VicGrid will work to coordinate new electricity generation and transmission investment, maximise economic and environmental benefits for local communities and Traditional Owners, and reduce connections risk for investors.

The Victorian Big Battery project near Geelong will also help modernise the electricity grid and improve the reliability and security of power supply – by storing cheap renewable energy when the weather makes it plentiful, and discharging it into the grid when it is needed most.

Reducing energy costs with greener homes and buildings

Helping households and businesses to be more energy efficient

The Victorian Government is investing \$797 million in the biggest household energy efficiency package in any state's history. It will support 4,000 jobs and assist with our economic recovery after the coronavirus (COVID-19) pandemic.

Improving the energy efficiency of our homes and other buildings makes them healthier and more comfortable to be in. It brings down energy costs, creates sustainable jobs and lifts economic productivity. It also reduces peaks in electricity and gas demand, increases the stability of our energy system, and reduces emissions. More energy efficient homes are also more resilient to climate extremes, such as heatwaves.

The Government is helping households and businesses reduce emissions and energy bills by supporting the uptake of efficient appliances and smart technologies, and improving the energy efficiency of our homes and buildings. Ambitious targets for the Victorian Energy Upgrades program aim to reduce Victoria's energy demand by 7 per cent by 2025, delivering cost savings for all Victorians.

Building better homes

Victoria has led the way in Australia with energy efficiency standards for new homes. Since 2011, more than 500,000 homes (roughly 20 per cent of all Victorian dwellings) have been built to a 6-Star energy efficiency standard.

All new Victorian homes will meet '7-Star' building standards under changes to the National Construction Code planned to take effect from September 2022. This will save households on their energy bills while supporting skills and jobs in our construction sector.

Aligned with changes to the National Construction Code, the Victorian Government is also set to expand the range of low-emissions choices open to households by removing barriers to the installation of efficient electric hot water systems. This will help households maximise the benefits of investing in solar panels and support those who choose all-electric new homes.

The Government is also rolling out minimum energy standards for rental homes from 2021, starting with a requirement that all rental properties have efficient heating. By 2030, these standards will have driven improved energy performance in around 320,000 rented homes.

Supporting vulnerable Victorians

The Government is providing support to vulnerable Victorians to reduce energy bills and improve the comfort of their homes by committing:

- / \$5.3 billion to construct more than 12,000 low-cost homes, all of which will meet 7-Star energy efficiency standards.
- / \$335 million to support 250,000 low-income and vulnerable households to replace inefficient and ineffective heaters with high efficiency reverse-cycle air conditioners. The Home Heating and Cooling Upgrades program is expected to save participating households between \$300 and \$900 annually on their energy bills and improve home comfort.
- / \$112 million to upgrade thermal performance and appliances in 35,000 existing social housing properties.

Rebates for efficient heating and cooling installations will help

250,000

low-income households save on their energy bills

Greener commercial buildings

We are committed to further strengthening energy performance standards for new commercial buildings and refurbishments as part of the National Construction Code. Changes to apply from 2025 will lead to reduced energy bills for businesses and help achieve our goal of improving average energy efficiency in commercial buildings.

Investing in energy efficiency for smaller, older office buildings delivers a financial return after only three years



Greener government buildings

The Victorian Government is playing a strong leadership role through enhancements to the buildings it owns and leases across the state. Improving the energy efficiency of these buildings is reducing emissions and leading to lower energy costs for taxpayers. It is also supporting jobs and growth in Victoria's green building industry and helping improve the quality of our building stock.

From 2021, all new Victorian Government buildings will have embedded environmentally sustainable design with a minimum 5-Star energy performance rating to apply to new office buildings and tenancy fit-outs. This will be increased to 6-Star – the highest rating for office buildings, in 2025. Government leases will also preference higher rated buildings and those with Green Lease Schedules.

The Government has also committed an additional \$60 million to the [Greener Government Buildings program](#) – adding to the \$280 million invested since 2009.

This program invests in energy performance upgrades in government buildings to reduce energy costs, reduce emissions and create jobs. Savings on energy bills will be reinvested in further upgrades, creating a \$201 million pipeline of energy efficiency and renewable energy projects. These investments will support jobs for engineers, project managers, suppliers of products and services, electricians, plumbers and mechanical contractors.

In addition, the Government is investing \$40 million in energy upgrades for our public health facilities, including solar power and high-efficiency LED lights. This investment will deliver energy cost savings for public hospitals as well as lower emissions for the state.

Victorians can save money on energy bills and reduce emissions by improving the energy efficiency of homes and businesses, and switching from gas to electrical appliances – especially where solar panels are installed

Clean jobs for the future

A clean economy will create jobs for Victorians

Renewable energy and energy efficiency programs have already created thousands of jobs across the state – many in regional Victoria – and will create thousands more. It is estimated that by 2030 our transition to 50 per cent renewable electricity alone will have created 24,400 jobs.

To support the continued expansion of the clean energy sector, the Victorian Government is investing millions of dollars in programs to build up skills and capacity in the workforce.

As part of our \$1 billion investment in training and skills, the Government has allocated \$10 million to Clean Economy initiatives to upskill and support workers to take on clean energy jobs.

A Clean Economy Skills and Jobs Taskforce will bring together clean economy experts and industry leaders to guide the design, establishment and implementation of a Clean Energy Workforce Development Strategy.

The Strategy will provide a comprehensive picture of Victoria's clean economy skills needs, and the training needed to provide workers with those skills.

A \$6 million Clean Economy Workforce Capacity Building Fund will provide grants to build capacity in training delivery in the Vocational Education and Training (VET) workforce and in industry settings.

Together, these initiatives will help Victorians access the training they need to take advantage of emerging job opportunities in clean energy, the circular economy (which aims to eliminate waste) and climate resilience.

The Victorian Government is partnering with industry, TAFEs and VET providers to provide training for the jobs of a clean economy

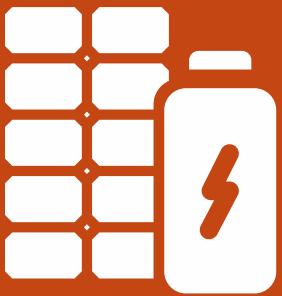
Boosting solar jobs

Victoria is the leading state for renewable energy employment, with 30 per cent of Australia's renewable energy jobs, according to the Clean Energy Council.

The Solar Homes program alone is expected to support the creation of more than 5,500 jobs over 10 years. As demand for skilled workers increases, a priority is ensuring that all workers – from new apprentices and trade assistants, to more experienced electricians and plumbers – have a consistent level of knowledge and skills to do their jobs safely and to a high standard.

Skills development will be particularly important to leverage job opportunities in regional areas, where around two-thirds of all renewable energy jobs will be based up to 2035, according to Clean Energy Council estimates. The Victorian Government will work to build the skills base in regional Victoria and provide ongoing job opportunities in these areas, including through the Solar Homes Program's skills and training programs.

2: Innovation for the future



Emerging opportunities

New technologies and practices for addressing climate change will emerge and develop in coming decades. In anticipation, the Victorian Government is developing roadmaps and investing in research, trials and pilot programs to ensure the state is ready to take advantage of emerging opportunities, and to choose the solutions that work best for us. The Government's landmark \$2 billion Breakthrough Victoria Fund, announced in the *Victorian Budget 2020-21*, will drive translation and commercialisation of knowledge in Victoria, with the clean economy as one of five key priority sectors.

Experience demonstrates that technologies once considered experimental or uneconomic can rapidly become part of the mainstream, particularly when supported by well-designed policies. An example of this is renewable energy and batteries, which have fallen in cost much faster than predicted. Solar panels are now a staple of the modern Victorian home, and batteries won't be far behind.

Between now and 2025, we will be focusing on innovative energy solutions, including exciting technologies like hydrogen, as well as accelerating the deployment of zero emissions vehicles across the state.



HOW THE COST OF **CLEAN** ENERGY HAS PLUMMETED

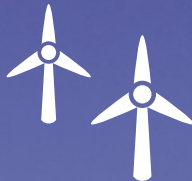
Solar

Since 1976, the price of a PV module has fallen from \$79 to 20 cents per watt of generation capacity



Wind

The price of wind turbines fell dramatically between 2009 and 2017, from \$1.45 to 91 cents per watt of generation capacity



Batteries

The price of lithium-ion batteries decreased by more than 85 per cent between 2010 and 2019, from \$1,183 to \$156 per kilowatt hour of storage capacity



Investing now in next-generation energy

Energy innovation

New, clean energy technologies create exciting opportunities for jobs, industries and a healthier environment. We are investing in next-generation renewable energy and smart technologies to capture these opportunities and ensure Victoria remains a renewable energy leader.

A new \$108 million Energy Innovation Initiative will attract novel technologies, new industries, innovation and development into the state, and will fund technologies such as offshore wind and renewable hydrogen.

This initiative will help to make emerging technologies commercially viable, and will accelerate the development and implementation of projects expected to play a critical role in Victoria's future energy transition.

Utilising our offshore wind resources

Victoria has the best offshore wind resource in Australia and one of the best in the world. The Government is developing an Offshore Wind Strategy to take advantage of this so-far largely untapped energy resource in Australia. The Strategy will build on international experience and expertise to identify the best ways to develop offshore wind energy. It will take account of local community and environmental priorities, aiming to maximise local jobs and develop local industries.

Developing a local renewable hydrogen industry

The Government is investing \$10 million in research and development initiatives for a local renewable hydrogen energy industry. Hydrogen has the potential to be widely used as a clean substitute for natural gas. In liquid form, it is a readily storable and transportable form of renewable energy. The Government will work with businesses on pilot programs and demonstrations with the aim of developing Victorian hydrogen production and, eventually, exports.

These investments complement the Victorian Government's commitment to the Latrobe Valley Hydrogen Energy Supply Chain (HESC) and CarbonNet projects.

\$108M

Energy Innovation Initiative will attract novel technologies, new industries, innovation and development into Victoria



Cutting emissions from natural gas

A roadmap to the future

Natural gas is used by around 2 million Victorian households for heating and cooking and is a key resource for industry, business, agriculture and essential services such as hospitals. The Victorian Government is committed to ensuring that gas reliability and security are maintained for all Victorians, and is also exploring sustainable alternatives and pathways for the sector to assist Victoria's transition to net-zero emissions.

A Gas Substitution Roadmap is being developed in consultation with stakeholders including unions, businesses and the community over the course of 2021, which will detail the transition pathways to achieve net-zero emissions and will identify opportunities for households and businesses that use natural gas to become more energy efficient and to switch to lower-emissions energy sources.

The pathways will include actions such as shifting more appliances to electricity, reducing fugitive emissions (leaks and other releases of methane to the atmosphere associated with gas production and transport) and exploring options to transition to lower emissions alternatives including hydrogen, biogas and other emerging technologies.

Reducing energy costs by shifting from gas to electricity

Victorian households and businesses that install solar panels and shift to efficient electric appliances and equipment stand to save money on energy bills, while also reducing emissions.

The Victorian Energy Upgrades program provides support to install a range of energy efficient products and the Solar Homes program and new Solar for Business program is helping households and businesses to install solar.

We can reduce emissions from natural gas by switching to smart, efficient electric appliances and equipment and using cleaner alternatives such as hydrogen and biogas

Driving uptake of zero emissions vehicles

Victoria's transport network underpins our state economy and quality of life – we can't live without it. But it is also a major and rising source of emissions globally, particularly on our roads.

The Government is taking immediate steps to support the uptake of zero emissions vehicles (ZEVs) across Victoria. In addition to setting a strong target of 50 per cent new light vehicles sales to be ZEVs by 2030, the Government will add hundreds of ZEVs to its own vehicle fleet over the next two years, and all new public transport buses will be zero emissions from 2025.

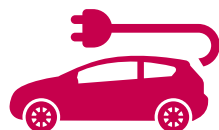
A \$100 million package of new policies and programs will ensure Victoria is a leader in the adoption of ZEVs in Australia and will position the state to take full advantage of the emerging global shift towards this new technology. This is made possible by a modest zero and low-emissions road user charge that will be introduced at a fraction of the level of motor vehicle-related taxes and charges that other vehicle owners pay, ensuring all road users are contributing to the upkeep of our roads.

The package includes:

- / \$46 million for a subsidy program to help Victorians buy ZEVs. The first program of its type in Australia, it will encourage Victorians to start the switch to ZEVs earlier, increase the supply and range of ZEV models available, and help drive down costs over time.
- / A \$5 million ZEV Innovation Fund to support greater uptake of ZEV commercial vehicles.
- / \$19 million to establish a coordinated fast-charging network at key tourist and community destinations and at high-use locations, and to support the rollout of charging infrastructure for commercial and government fleets. This will make it easier for ZEV owners to use their vehicles with confidence across the state.

50%

**of Victoria's light
vehicle sales will
be zero emissions
vehicles by 2030**



The Government will also support the shift to ZEVs by investing \$10 million in its own vehicle fleet, adding 400 ZEVs over the next two years.

We are also 'greening' our bus fleet, with all new public transport buses to be zero emissions from 2025. This will not only reduce emissions but lower operating costs and reduce air pollution and noise. The transition is being kick-started with a \$20 million Zero Emissions Bus Trial from 2021. The trial, to run over three years, will test different technologies on buses across the state.

The Government has set a target for 50 per cent of new light vehicles sales to be ZEVs by 2030. To get us there, we will establish an Expert Advisory Panel to look at vehicle emissions standards, long-term incentives and other measures to help us meet our goal.

Victoria will also work with other states and territories to look at options for developing a harmonised approach to vehicle emissions standards, given the lack of action at the national level.

The Government's ZEV Roadmap sets out Victoria's priorities for the transition to ZEVs.

THE WORLD IS SHIFTING TO LOW AND **ZERO** EMISSIONS VEHICLES

Technology change

Electric vehicles are improving rapidly and could be fully competitive with traditional vehicles as early as 2025



Shifting markets

Most major car manufacturers have set electric vehicle sales targets, and at least two have committed to ending internal combustion engine vehicle production as early as 2030

Global support

Governments worldwide are supporting the transition to ZEVs by setting targets, strengthening regulation, and providing better information and incentives for consumers

18

countries and 10 US states have set goals for all new light vehicles to be low or zero emissions from as early as 2025

The list of countries includes some of the world's largest economies: the United Kingdom by 2030, Canada and France by 2040, and Japan and Germany by 2050

3: Resilient farms and forests



19%

Victoria's forests
and natural systems
absorbed around
19 per cent of the
state's emissions
in 2019



Revitalising the natural environment

Victoria is privileged to have some of the world's most breathtaking biodiversity – it is rich, unique and precious. Our natural environment is fundamental to our health and wellbeing and underpins important industries – not least the agriculture and tourism sectors. Revitalising and building resilience into our natural landscapes provides benefits on a broad front. It supports our climate change goals, heals Country, enhances the environment, protects the agriculture and tourism industries, and improves water and air quality. The Government also embraces the principle that our native plants and animals – in all their rich biodiversity – have an intrinsic right to exist, thrive and flourish.

We believe, therefore, that Victorians have a duty to protect biodiversity regardless of whether it provides tangible benefits to humans. This means working to mitigate the potentially harmful impacts of climate change on all fronts – including in natural, farming, recreational and other developed settings. It also means embracing new ways to contribute to net-zero emissions by 2050 – including in the emerging areas of soil carbon and blue carbon sequestration, and through existing and planned government action to reduce emissions in the land sector.



Protecting and restoring the environment

Protecting our forests

The Victorian Government is investing \$120 million to phase out commercial native forest harvesting by 2030. Native forests contain much of our most intact natural capital as well as storing large amounts of carbon. This commitment will reduce emissions by up to 1.7 million tonnes on average each year for 25 years and ensure that our old growth forests and the habitat of our rarest native species can exist and thrive for future generations.

The Government has also committed \$110 million to the Gippsland Plantations Investment Program to significantly grow the state's plantation estate and create an alternative fibre supply for the future. The program provides incentives for industrial-scale planting to bolster Victoria's timber supplies. Well managed plantations can quickly draw in carbon from the atmosphere, and plantation timber

- once processed and used in construction
- locks the carbon away for many decades.

Restoring our land

The Government is investing \$77 million over 16 years to help land managers restore and protect natural landscapes and vegetation through the Nature Restoration for Carbon Storage – BushBank program. The funding will provide economic support for Traditional Owners, landowners and rural communities and create jobs in regional Victoria.

The Government recognises the deep knowledge and expertise of Victoria's Traditional Owners, and that their relationship and connection to Country is intrinsic to their history, identity and culture. The Government will partner with Traditional Owners and others to co-design the BushBank program. This will enable Traditional Owners to participate in carbon and land restoration markets, and deliver cultural, economic and environmental benefits.

100K
hectares of
restored biodiverse
habitat by 2030



Up to
30M
trees planted
in shelter
belts and
plantations



A thriving agriculture sector

Working with farmers and industry

The Victorian Agriculture and Climate Change Council was established in 2020 to support the agriculture sector to prepare for climate change impacts, reduce emissions and maximise opportunities to contribute to net-zero emissions by 2050. The council will shape and deliver strong, lasting collaborative action on climate change for the agriculture sector.

The establishment of the council comes on top of government support for Victorian farmers to maximise existing efforts to reduce emissions. This includes support to increase awareness of on-farm emissions, and to identify opportunities to adopt new technologies and best-practice management techniques.

To help farmers further kickstart meaningful action on reducing emissions, \$10 million will be invested in a pilot program to deliver up to 250 on-farm action plans. Up to \$5 million of the funding will be available as grants to implement actions recommended in the plans. The Victorian Land Use Information System will also be upgraded with an investment of \$4 million. Data from the system will inform a new Agriculture Climate Spatial Tool that supports farmers to adapt their businesses based on future climate scenarios.

The Government is also assisting farmers to plant trees through the Victorian Carbon Farming Program. The Program will invest \$15.3 million to encourage landholders to plant trees to sequester carbon, to conduct agroforestry or to realise other on-farm benefits such as protecting crops and animals against extreme weather. As well as helping Victoria to reach its 2050 net-zero emissions target, these investments will protect livestock and crops, provide logs for Victoria's wood processing industries and create jobs in regional communities.

Achieving further emissions reductions in Victorian agriculture in the medium and long-term will require leading-edge research, innovation and deployment of new technologies and practices. The Government

will invest \$3.9 million to accelerate two trials of methane-inhibiting feed additives such as 3-NOP and seaweed (asparagopsis) at Agriculture Victoria's Ellinbank SmartFarm research centre, to test how well they work on Victorian farms.

The 231-hectare, 500-cow Ellinbank SmartFarm is Australia's leading dairy innovation facility, and is on track to become the world's first carbon-neutral dairy farm by 2026. The SmartFarm will become carbon-neutral by reducing methane emissions, improving fertiliser and manure management, and generating electricity through solar, wind, hydro and bio-digestion. The SmartFarm is also supported by the Government's \$115 million Agriculture Strategy, which aims to position Victoria as a leader in low-emissions agriculture and increase the adoption of new, effective and fit-for-purpose technology.

To ensure farmers are well placed to take up other advanced and proven technologies – such as renewable energy and waste management systems – the Government has expanded the Agriculture Energy Investment Plan, providing an additional \$30 million to continue supporting farmers to improve on-farm energy generation and efficiency.

Almost
\$20M
to accelerate
Victoria's agriculture
sector response
to a changing
climate



BENEFITS OF MANAGING OUR FARMS AND FORESTS

Trees

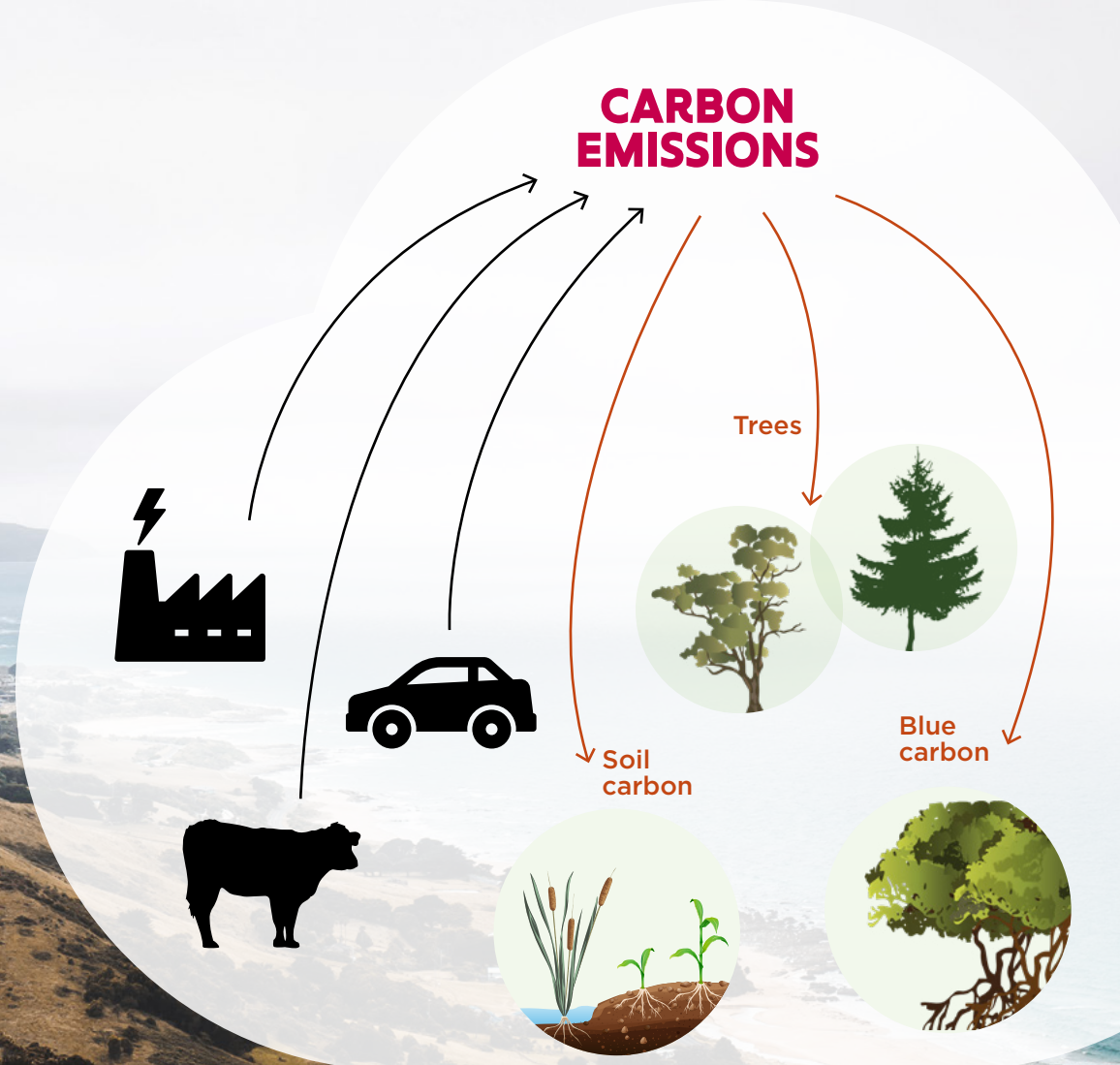
As trees grow, they take in carbon dioxide from the atmosphere and store it as wood. Harvesting plantation trees has the benefit of locking the carbon away in buildings and wood products.

Soil carbon

Soil absorbs significant amounts of carbon from the atmosphere. Farmers play a key role in managing the soil on their farms, with many now managing grazing and cropping to increase the storage of carbon. These practices can also improve farm productivity and provide an additional source of income for farmers.

Blue carbon

Coastal ecosystems such as mangroves, salt marshes and mud flats capture significant amounts of carbon via the plants and animals that live in them. We can use and manage these ecosystems in ways that can help them to store more carbon, protect against coastal erosion and boost fish and shellfish populations.



4: Climate smart businesses and communities



Working together

Addressing climate change is a collective endeavour, requiring actions that cut across all levels of government, businesses, communities and households. The best outcomes for our climate and our environment, and the greatest opportunities for the people of Victoria, will come through working together. Across the state, many Victorians are taking action to reduce emissions within their households and local communities, through schools and sporting clubs, and in small and medium businesses and major industries of every type.

The Government is committed to working with Victorian businesses, households and communities to support their ambitions and build our actions on climate change together. This includes:

- / Helping businesses to adapt and thrive in a low-emissions future by adopting more efficient practices and technologies while lowering energy and resource costs and supporting jobs
- / Supporting households with more funding for energy efficiency, solar panels and batteries and better waste management and recycling, saving Victorians money
- / Funding and enabling local energy solutions for communities to reduce their emissions and increase energy autonomy while improving the resilience of our electricity grid
- / Supporting the efforts of local councils to tackle climate change and reduce emissions from their own operations and across their local communities.

Supporting industry and small businesses to be climate smart

Partnering with business

Victoria's 100 largest energy users account for 20 per cent of the state's energy consumption. Smart energy management systems can help businesses reduce their energy use and deliver significant energy cost and emissions savings. The Victorian Government is investing \$31 million to support high-energy using businesses to adopt energy solutions to reduce costs and prepare for a low-emissions future. The program includes a focus on energy management systems and energy efficient equipment.

Electricity is a major
cost for industry.
Businesses participating
in the Victorian Energy
Upgrades program
on average save
\$3,700
on their annual
energy bills

The Government is also expanding the Victorian Energy Upgrades program to help small to medium enterprises adopt energy efficiency upgrades, such as efficient refrigeration and smart controls for buildings and equipment. We are also expanding energy choices for small businesses by providing access to rebates for solar panels for up to 15,000 enterprises through a new Solar for Business Program.

The Government will work with industry to reduce leaks of harmful greenhouse gases from commercial refrigerators and air-conditioning through better maintenance of equipment and safe management and disposal of the gases. These measures will provide benefits to businesses through the adoption of more efficient equipment that reduces energy use and costs. We will also work with the Commonwealth Government to speed up the national program to move away from these harmful gases to established, cleaner alternatives.

Recycling Victoria

Two-thirds of Victoria's emissions from the waste sector result from the decomposition of organic material – such as food and garden waste, paper, cardboard and timber – in landfill. By diverting waste from landfill for recycling, we can cut emissions, reduce air, water and soil pollution and support economic development.

The Government is investing \$515 million to deliver the biggest reform and transformation of the waste and recycling system in our state's history. The investment includes \$380 million to deliver *Recycling Victoria* – a plan to help businesses and households improve their resource efficiency, reduce waste and recycle more. *Recycling Victoria* will also create around 3,900 jobs and support the development of clean technologies that will facilitate new markets and new business opportunities for recycled materials.

Empowering communities to respond to climate change

Local climate action

Local councils and communities across Victoria are playing a crucial role in our collective response to climate change. We are committed to encouraging and supporting these efforts because we recognise that regions and municipalities across the state face different challenges, and can draw on their unique strengths when it comes to reducing emissions. By working together, we can empower communities to shape and take hold of the opportunities created by our transition to a net-zero emissions and climate resilient future.

Local councils

Victorian councils are delivering ambitious climate change policies and making a substantial contribution to reducing Victoria's emissions and supporting their local communities to respond and adapt to climate change.

More than 30 councils have committed to achieving net-zero emissions before 2050 across their local communities or for their own operations. To acknowledge these actions, and as a platform for local governments and the Victorian Government to work together towards a net-zero future, councils are submitting voluntary [council pledges](#) under the *Climate Change Act 2017*.

Every effort by councils to reduce emissions gets us closer to our goals, with council actions spanning every sector of economic activity, from energy and transport to land use and waste.

Among key local government initiatives:

- / Councils are collaborating on emissions reduction and resilience through the Victorian Greenhouse Alliances. These nine regional alliances share resources to address common climate change challenges, and are recognised as best-practice examples of collaboration.
- / More than half of Victoria's 79 local councils are working towards pooling their energy purchasing and switching to renewable energy, saving ratepayers money, supporting local transitions to renewable energy and creating local jobs.
- / About 20 Victorian councils have switched to a kerbside food organics and garden organics waste collection service, diverting waste from landfill and reducing associated greenhouse gas emissions.
- / Many councils are integrating zero emissions vehicles (ZEVs) into their fleets and quiet and clean electric garbage trucks are taking to Melbourne's streets.

**More than 30
Victorian councils
have set net-zero
emissions goals**

Empowering communities to reduce emissions

Communities

Community Climate Change and Energy Action program

The Victorian Government is supporting schools, kindergartens, sports clubs and community centres to install solar panels, energy efficient equipment and batteries through the Community Climate Change and Energy Action program, which offers grants of up to \$50,000.

Solar on Public Buildings program

The Solar on Public Buildings program is a \$9.2 million initiative to help reduce the energy bills of volunteer committees of management that operate public buildings on Crown land. Grant recipients will receive an energy audit, a site assessment and a rooftop solar system. Similar programs have reduced electricity bills for participants by an average of 81 per cent.

ResourceSmart Schools program

The ResourceSmart Schools program provides free support to Victorian schools to embed sustainability across their facilities, community and curriculum, while saving resources and money.

Supporting communities to switch to renewables

Local energy projects

We understand that communities want more control over their energy and emissions. That is why we are investing to support local projects that increase the use of clean energy.

The Government is investing \$26.7 million in funding to support microgrids, neighbourhood batteries and community-owned renewable energy projects, including funding to support pilot projects in bushfire-affected communities in eastern Victoria. The loss of electricity during extreme weather events can be very damaging to local communities, sometimes forcing evacuations and reducing long-term economic activity. Towns with stand-alone power systems or microgrids may be better equipped to withstand extreme events. The Neighbourhood Battery Initiative will fund trials of a range of ownership and operational models to support understanding of the role neighbourhood batteries can play in Victoria's energy transition.

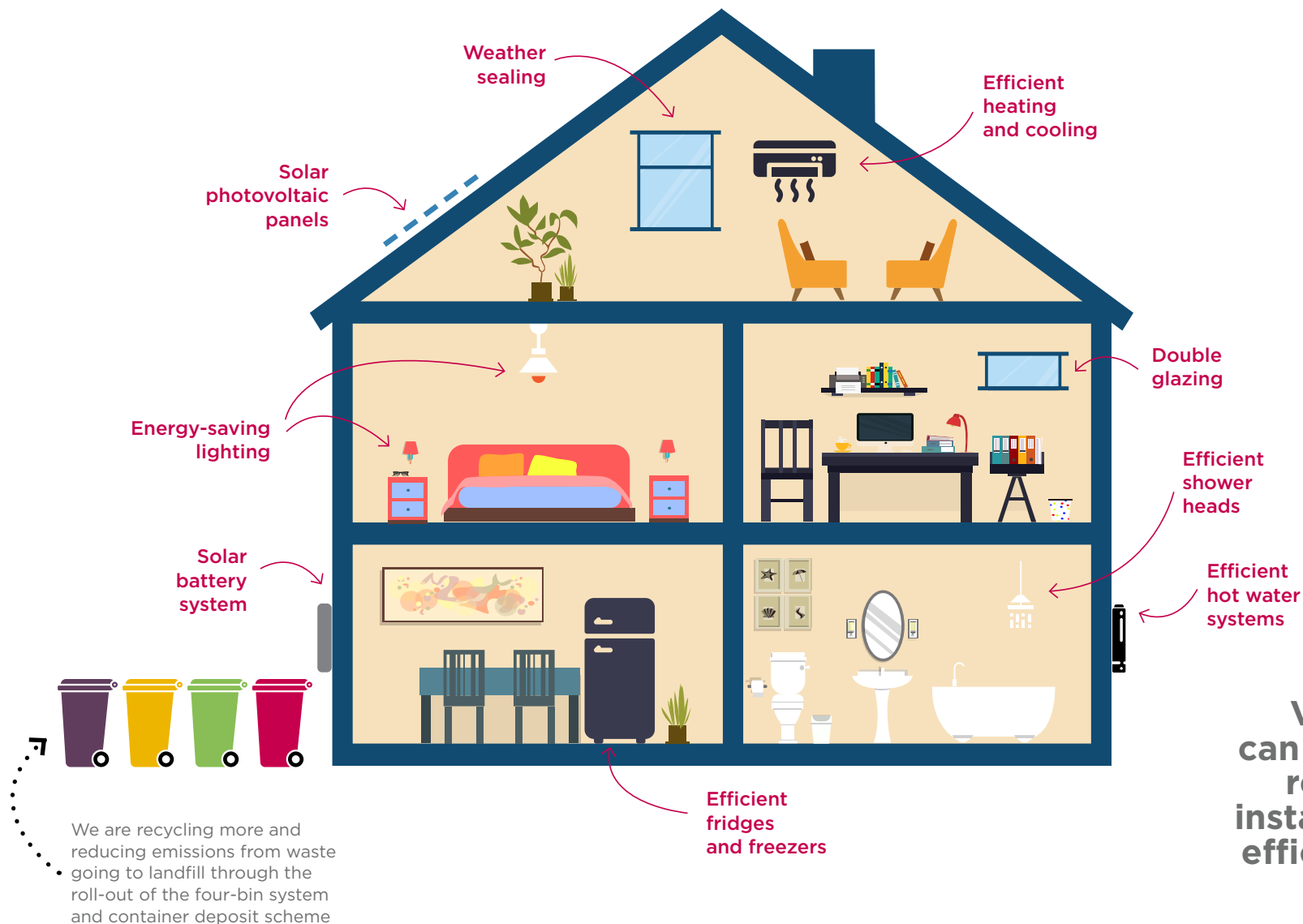
In addition, through the successful piloting of Community Power Hubs in Ballarat, Bendigo and the Latrobe Valley, a total of 15 community energy projects have been implemented. These hubs have reduced emissions and saved local businesses and communities around \$364,000 in electricity costs. The Government is expanding the program by \$5.94 million to fund up to six additional hubs to provide more communities with the opportunity to develop locally-owned and cost-effective renewable energy projects they can be proud of.

Traditional Owner Renewable Energy Program

The Traditional Owner Renewable Energy Program makes available \$1.1 million to all eleven of Victoria's current Registered Aboriginal Parties to self-determine how they will be part of Victoria's renewable energy transition. The aim is to hear directly from Victoria's Traditional Owners and to support plans and projects for the uptake of renewable energy, to reduce emissions, and to deliver social and economic benefits to Aboriginal Victorians.



GOVERNMENT IS SUPPORTING HOUSEHOLDS TO **REDUCE** EMISSIONS AND SAVE MONEY



Information on how to access these programs is available at:

victorianenergy.saver.vic.gov.au

Information and tools to save energy and money on bills

solar.vic.gov.au/solar-rebates

Information on rebates and grants for solar energy and energy efficiency upgrades

sustainability.vic.gov.au

Information on how to live sustainably and take action on climate change

Victorian households can receive government rebates or support to install a range of energy efficient products, solar panels and batteries



Sustainable living and travelling

Public transport

Our public transport network plays a central role in supporting the state's economic growth and the quality of life of Victorians. Strong and sustainable public transport will also be a key contributor to our low-emissions future.

To support increasing demand for clean public transport, the Government is making an unprecedented investment in the expansion and modernisation of Victoria's public transport system, including \$11 billion for the Metro Tunnel, \$5 billion for Melbourne Airport Rail and \$2.2 billion to kickstart the Suburban Rail Loop.

Our metropolitan train and tram network will be 100 per cent powered by fully renewable electricity by 2025. To further decarbonise the public transport network, new buses will be 100 per cent zero emissions from 2025.

Walking and cycling

The Government is making it easier for Victorians to walk and cycle around their neighbourhoods. Over 250 kilometres of cycling and walking paths are being built or planned through our major transport infrastructure program. In addition, 100 kilometres of new and improved cycling routes are being trialled across key inner-city suburbs to make it easier and safer for people to cycle to and from the CBD.

Development of '20-minute' neighbourhoods under the Plan Melbourne program will give people the ability to meet most of their daily needs within a 20-minute walk from home. This will further reduce emissions by reducing trips by car and creating more inclusive, vibrant and healthy places for Victorians to live.

250

kilometres of cycling and walking paths being built or planned and 100 kilometres of new cycling paths being trialled in and around the Melbourne CBD



We are aiming for
25%
of trips to be
by foot or cycle
by 2030

5: A climate resilient Victoria



6x
every dollar
spent on
adaptation now
can avoid future
costs of up to
six times as much

Victoria's climate is changing

Victoria's climate has warmed by 1.2 degrees since national records began in 1910, and we are already feeling the effects.

The state is drier, resulting in more hot days, harsher fire weather, and longer fire seasons.

As the climate continues to warm, our need to recover and build resilience between events will continue to increase.

The severity of recent bushfire seasons has had an unprecedented impact on communities across our state. More than 1.5 million hectares were burnt in the 2019–20 bushfires, resulting in \$325 million in economic impacts on farms and up to \$350 million in lost tourism revenue. These unprecedented bushfires also severely impacted threatened species and their unique habitats, including approximately 78 per cent of the state's remaining warm temperate rainforest.

We need to adapt

Climate change adaptation refers to action taken to reduce the adverse consequences of climate change or harness opportunities. Investing in climate change adaptation:

- / Helps us to avoid potentially massive future costs by building resilience now into our environments, our economy and society
- / Protects plants, animals, and communities – particularly those most vulnerable to the consequences of climate extremes
- / Supports job creation in emerging and evolving industries.

Our vision

Our 2050 vision is for Victoria to be climate-resilient, prosperous and liveable.

Our 2050 objectives are:

- / Climate-resilient built and natural environments
- / Prosperous, liveable and healthy communities
- / An orderly and just adaptation process.

OUR ACTIONS WILL BE GUIDED BY OUR 2030 OBJECTIVES

Emergency management and disaster preparedness

Victoria's communities will actively participate in disaster risk mitigation, response and recovery. Our emergency management sector will continue to improve its capability to address emerging risks, and will practise evidence-based disaster risk management in the context of a changing climate.

Built environment and infrastructure

Our built environment and infrastructure will have an improved ability to avoid, withstand and recover from climate change impacts, while continuing to provide essential services and support community wellbeing.

Industries and livelihoods

Victorian industries, businesses and workers will manage the risks and take advantage of the opportunities and new jobs created by the transition to a net-zero emissions and climate-resilient future.

Communities and regions

Our communities and regions will have the power, capacity and resources to adapt to climate change, leaving no one behind.

Biodiversity, ecosystems and natural resources

Victoria's biodiverse ecosystems will be functional and resilient in the face of climate change. They will be actively managed and enjoyed, balancing sometimes competing values and uses.



ADAPTATION IN ACTION

Adapting our ecosystems

At Nardoo Hills Reserve in central Victoria, hotter and drier conditions due to climate change are causing extensive dieback of eucalypt trees. This is threatening the temperate woodland ecosystem, which is home to significant biodiversity and culturally significant sites for the Dja Dja Wurrung people.

Informed by climate projections, the non-profit organisations Bush Heritage and Greenfleet – supported by the Arborline Nursery, Hamilton, the Victorian Government, the University of Melbourne and CSIRO – have planted more than 11,000 eucalypt seedlings from regions that currently have the climate that Nardoo Hills Reserve can expect in 30–70 years.

This adapted ecosystem will continue to absorb carbon in the long-term, and its adaptation response will be monitored for decades to come. The trial will provide both economic opportunities and adaptation lessons for similar and larger scale projects in the future.

A smart business decision

Winemaker Ron Snep of Welshman's Reef in central Victoria has shifted 40 kilometres south to ensure his grape production can continue in the face of increasingly hotter temperatures in the Bendigo wine region.

"Climate change has altered the growing schedule of my fruit, resulting in shorter and earlier harvesting periods," Mr Snep said. By moving his operations to a vineyard in Smeaton, near Daylesford, Mr Snep has secured a safer, more reliable environment – with a cooler climate, more dependable rainfall, and lower risk of frost – in which to grow his future harvests.

Loddon Mallee Youth Climate Network

The Loddon Mallee region has created space for young people to connect with each other, share information and knowledge, and have their voices and opinions on adapting to climate change heard in their own communities. The Youth Climate Network builds connections between young people, embodies the principles of collaboration and co-design, and empowers young people to contribute to decision making that will affect their futures. Members develop the skills and confidence to communicate and facilitate change in their communities while contributing to adaptation.

Supporting vulnerable and disadvantaged people to adapt

The community services sector plays a unique role in supporting communities to respond to climate emergencies and also adapt to long-term climate impacts. Jesuit Social Services recently designed and delivered training and peer learning workshops on building community resilience and adaptive capacity to 90 participants from 49 organisations involved in community services.

The program was targeted at particularly vulnerable areas subject to urban heat and socio-economic disadvantage, and a resource kit was shared to assist with translating their workshop-acquired knowledge into action. Recognising the need and urgency for building adaptive capacity within the sector, Jesuit Social Services are hiring an Ecological Justice Project Officer to continue building on this work.

Victoria is already building climate resilience

We are addressing the current impacts of climate change on Victoria

The severity of recent bushfire seasons serve as a reminder that our preparations for disasters – as well as our response and recovery efforts – must take into account our changing climate. The Victorian Government recognises that decisions and actions we take now must help build our long-term capacity to adapt to climate change.

**Victoria's
Climate Change
Adaptation
Plan 2017-20
laid strong
foundations for
our future climate
resilience**

We are reducing barriers to climate change adaptation

Barriers to climate change adaptation planning and action are an ever-present challenge for policymakers and communities. The most commonly reported barriers relate to a shortage of appropriate information and knowledge, as well as policy and organisational barriers. The Victorian Government will support institutional arrangements, systems and processes that reduce barriers to adaptation planning and action. We will encourage and support experimentation and innovation in working with industries, communities and local governments to support robust, informed decision making and collaboration.

We are laying the foundations for transformational adaptation

Adapting to our changing climate will require some trade-offs between the needs of current and future generations to protect the long-term interests of Victorian communities, species, and businesses.

The Government will help identify the transformational change needed to ensure a climate-resilient Victoria for generations to come, and will test and learn from different transformative approaches.

**Guided by the Climate
Change Strategy,
Adaptation Action Plans
will be in place from 2022
for seven key systems
of Victoria's environment
and economy**

Victoria's adaptation priorities to 2025

Priority focus areas

Key enablers

Capacity building and partnerships

Victorian Government, businesses and communities will work together towards a shared vision for adaptation. Knowledge will be widely shared and the state will partner with others to support learning and change across the state.



Governance and strategic planning

The state's governance arrangements will support decision making in the face of future challenges and uncertainty, enable collaboration and promote learning and experimentation.



Sustainable adaptation finance

Victoria's state and local governments and the private sector will work together to enable access to adaptation finance and ensure climate change risks are accounted for in financial decisions, products and services.



Leadership and innovation

The Victorian Government will lead and collaborate with leaders and innovators across communities, industries and other governments to achieve transformational adaptation.



Address current climate change impacts

Support place-based adaptation including effective and inclusive community participation and empowerment, with special emphasis on vulnerable communities.

Embed climate change adaptation into emergency management including all funded agencies and service operations, particularly to protect the most vulnerable.

Address gaps in insurance coverage for public assets and key infrastructure at risk from climate change impacts.

Transparently communicate to all Victorians the challenges, opportunities and trade-offs required under climate change.

Reduce barriers to adaptation

Establish a climate change adaptation capacity building program, including provision of fit-for-purpose climate science information, knowledge brokering and collaborative networks.

Adopt best-practice climate risk management across all portfolios, including all funded agencies and service operations.

Integrate climate change risk management into investment decisions, particularly for large and long-lived investments.

Drive adaptation leadership across government and the community, including empowering youth.

Lay the foundations for transformational adaptation

Partner with Traditional Owners, Registered Aboriginal Parties and other Aboriginal communities to ensure their cultural, ecological and economic values and expertise are integrated into climate change adaptation planning.

Incorporate climate change considerations into education, training and re-skilling of the workforce.

Monitor, evaluate, report and improve climate change adaptation by developing and implementing a long-term framework based on state-wide risk assessments.

Ensure relevant legislation, standards and codes support the use of best available climate change data and adaptive planning principles as part of decision making, particularly as it relates to infrastructure, development and land use changes.

Demonstrate the benefits and business case for climate change adaptation action.

Support the development of new and innovative climate change adaptation finance models.

Lead innovative trials and pilot projects that test transformational adaptation approaches, learning from them to inform future practice.

Identify the transformational changes needed and develop effective change management strategies, ensuring all voices are heard.

Next steps

Victorian Greenhouse Gas Emissions Report

Released each year, tracking the state's greenhouse gas emission levels and explaining trends over time

Emissions reduction targets set to 2035

We will seek independent advice ahead of setting targets for 2035

Emissions reduction pledges for 2026 to 2030

Finalised with actions to further reduce Victoria's emissions and achieve our emissions reduction targets

Adaptation Action Plans

First five-yearly Adaptation Action Plans released for health and human services, education and training, natural environment, built environment, water cycle, primary production and transport, to take effect from 2022

Climate Science Report

Released every five years, setting out the latest climate science and the implications for Victoria

2021

2022

2023

2024

2025

Stay informed on
Victoria's transition to a
net-zero emissions and
climate-resilient future at
climatechange.vic.gov.au



