

# Directions for a **Climate Smart South Australia**



Government of  
South Australia





## The Marshall Liberal Government is investing in practical action to help prepare South Australia for a new climate future.

Through practical action to harness economic opportunities, reduce greenhouse gas emissions and adapt and build resilience to climate risk, South Australia can attract new investment, drive innovation, create jobs and further enhance the liveability of our great State.

We are delivering climate resilient, ecologically vibrant and liveable places through initiatives such as Green Adelaide and the Greener Neighbourhoods program, investing to secure the future of our coastline and providing climate science and information. The government is also undertaking planning to mitigate risks to people, the environment and the economy as a result of more frequent heatwaves and extreme weather.

South Australia has the resources and expertise needed to capture a share of fast-growing markets in low emissions and climate resilient goods and services.

The government is aiming towards net zero emissions and is already helping South Australians to make the transition to a low emissions economy.

A climate smart South Australia is pivotal to *Growth State: Our Plan for Prosperity* and the government's 2036 vision for a better future for all.

This Directions Statement sets the pathway for climate smart planning and action across the South Australian Government.

*I acknowledge and thank the Premier's Climate Change Council for its assistance in developing the government's directions statement.*

**David Speirs MP**  
**Minister for Environment and Water**

### **Acknowledgment of country**

We acknowledge and respect the Traditional Custodians whose ancestral lands we live and work upon and we pay our respects to their Elders past and present. We acknowledge and respect their deep spiritual connection and the relationship that Aboriginal and Torres Strait Islanders people have to Country.

We also pay our respects to the cultural authority of Aboriginal and Torres Strait Islander people and their nations in South Australia, as well as those across Australia.

# Why should we act on climate change?

Addressing climate change is both an urgent imperative and opportunity.

South Australia's climate has changed and further change is inevitable. This affects us all as the physical impacts of a changing climate are already being felt by South Australia's people, environment and economy.

To minimise the impacts, governments, businesses and communities around the world are reducing emissions, transitioning their economies and adapting to change that is already happening.

As a result of this action, the global economy is transforming and demand for renewable energy, new technology and climate smart goods and services is growing exponentially. Investment decisions are increasingly considering the risks of a changing climate and the global transition to a lower emissions future.

With South Australia's abundance of renewable energy resources, land, infrastructure, expertise and access to key trade markets, South Australia is well positioned to capitalise on the economic opportunities to grow innovative, low emissions businesses and tap into increasing demand for clean energy and climate smart goods and services.

We need to act now to mitigate climate risk and for South Australia to build on its leadership position and successfully harness current and emerging opportunities for economic growth.

By taking action we will manage the adverse impacts of climate change and become a more resilient, climate smart state.

The South Australian Government is committed to climate smart planning and action to manage risk and harness the opportunities to drive low emissions jobs and growth, to protect our environment and to support community resilience and wellbeing.

## Managing risk

In March 2019, the Deputy Governor of the Reserve Bank of Australia advised that climate change and the low emissions transition is likely to have first order economic impacts – affecting monetary policy, financial stability and the wider Australian economy.

## Harnessing opportunity

South Australia already has a strong reputation as a leader in low carbon renewable energy, agricultural technology, efficient water management, innovation and research. South Australia can further capitalise on the transition to a low carbon economy by developing business and export opportunities for climate smart goods and services.

## Business planning

A recent survey of Business SA members indicates that over 60 percent of small to medium businesses are factoring climate change into their strategic planning.



# South Australia will become hotter and drier, with more frequent and intense extreme weather events

## Higher temperatures



Maximum, minimum and average temperatures will continue to rise with more frequent hot days and longer warm spells.

## Drier with more time in drought



Autumn-spring rainfall has decreased by up to 20% in some agricultural areas. Further reductions and more time in drought is projected.

## More dangerous fire weather



Warmer and drier conditions will result in harsher fire weather, more days of severe and extreme fire danger and longer fire seasons.

## Rising sea levels



Sea level is rising with a projected increase of up to 0.8m by 2100. This will increase coastal erosion and flooding.

## More intense heavy rainfall events



Heavy rainfall events will increase in intensity, increasing the risk of flooding.

## Challenges for South Australia



Public health and safety risks from heatwaves and more frequent extreme weather events.



Risks to water security for agricultural, economic and environmental needs.



Risks for agriculture and fisheries



Greater damage and costs from more frequent and severe bushfires, heatwaves, floods and storms.



Economic changes from the transition to low emissions.



Risks to biosecurity and the natural environment

## Opportunities for South Australia



New low emissions industries and jobs



Innovative, climate smart agriculture



Electric and clean fuel transport



Attract investment and people to SA



Build business and community resilience



Increase carbon storage



# The opportunity

## South Australia is in a strong position to tackle climate change and support clean economic growth.

Our State has been successful in growing the economy while reducing emissions. Between 1990 and 2017, the state's net greenhouse gas emissions reduced by 39 percent while Gross State Product increased by 76 percent (Figure 1).

Investment in solar, wind power and battery storage has been a key factor supporting both economic growth and low emissions electricity supply. As a result, South Australia is well placed to become an exporter of renewable energy.

South Australia has an opportunity to build on its strengths and grow in the following established and emerging areas:

- hydrogen fuel and biofuels;
- electric vehicles and low emissions transport;
- climate resilient agriculture;
- minerals for batteries and low emissions technologies;
- low emissions technology industries;
- energy intensive industries powered by renewables;
- carbon farming and trade in carbon offsets;
- innovations in waste and recycling;
- increased green canopy cover reducing the urban heat island effect;
- coastal protection measures including Blue Carbon strategies;
- the knowledge and circular economy; and
- digital technology.

Our State has an entrepreneurial and innovation ecosystem that can design and support climate smart solutions. Innovation hubs such as the Tonsley Innovation District and Lot Fourteen, bring together research and education institutions, established businesses and start-ups to foster innovation in new industries such as clean technology and renewable energy.

The South Australian Government will continue to work with a range of stakeholders including universities, businesses and entrepreneurs to foster climate smart entrepreneurialism and support the take up and commercialisation of innovation.

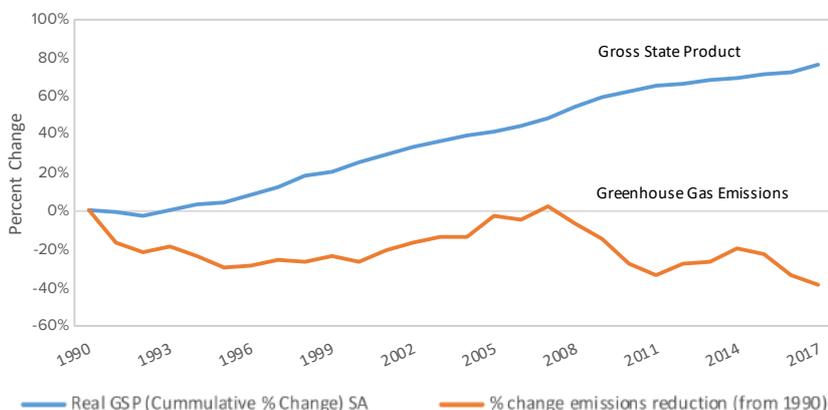


Figure 1: Cumulative change in Gross State Product compared to change in greenhouse gas emissions from 1990 levels (1990 - 2017 financial years)

Sources: State and Territory Greenhouse Gas Inventory 2017 and Australian Bureau of Statistics, 5220.0 - Australian National Accounts: State Accounts, 2017-18



### A renewable energy boom

Our State has one of the world's highest levels of renewable electricity. Around half of South Australia's electricity is generated from renewable sources. Our renewable energy capacity is continuing to increase with over \$16 billion worth of large scale projects under development. The proposed SA-NSW interconnector will enable renewable electricity to be more easily exported to other states.



### South Australia's hydrogen potential

Hydrogen fuel can be produced from renewable energy and water and is an emerging industry that has huge economic potential. South Australia has the resources, infrastructure and skills to be a world class hydrogen supplier. The government is supporting this opportunity through a number of renewable hydrogen projects as well as advancing hydrogen regulation and safety and contributing to the development of a National Hydrogen Strategy.



### Adapting Agriculture

South Australian primary producers are leaders in adapting to climate variability. Examples of climate smart strategies include innovative irrigation technologies to optimise production and water use efficiency; government research and development including incorporating new crop varieties and technologies to improve resilience to drought and extreme weather events and soil improvement research to increase soil productivity while also storing carbon to reduce emissions.

# Directions for a Climate Smart South Australia

A changing climate affects all South Australians. The South Australian Government will lead the way in taking practical action to address climate change by working with Local Government, business, industry and the community to manage climate related risk and opportunity. Five policy directions will guide government planning and action.

## 1. Unlock innovation and economic opportunity

The State Government will support the development of low emissions and climate smart industries and services in South Australia.

With the government's support, South Australia is becoming a hub for climate smart business and industry. The State's economy and workforce are benefiting from investment in renewable energy and attraction of electric vehicle and battery production businesses to Adelaide. Innovation districts, such as Tonsley and Lot 14, are growing the high-tech, clean-tech and renewable energy businesses of the future.

There are further opportunities for growth in clean hydrogen fuels, minerals for batteries, energy intensive manufacturing and technology powered by renewables as well as climate resilient agriculture and carbon farming.

### Climate Smart Investment and Jobs

South Australia's battery industry is booming with international companies Sonnen, Alpha-ESS and Eguana establishing manufacturing facilities in Adelaide. Together these companies will inject many millions of dollars into the State's economy and create new jobs.

## 2. Reduce net emissions

The State Government will lead an orderly and socially responsible transition to a low emissions economy.

Thanks to South Australia's rapid increase in renewable energy generation, the State is already on the pathway to a low emissions economy with net emissions reducing by 39% since 1990.

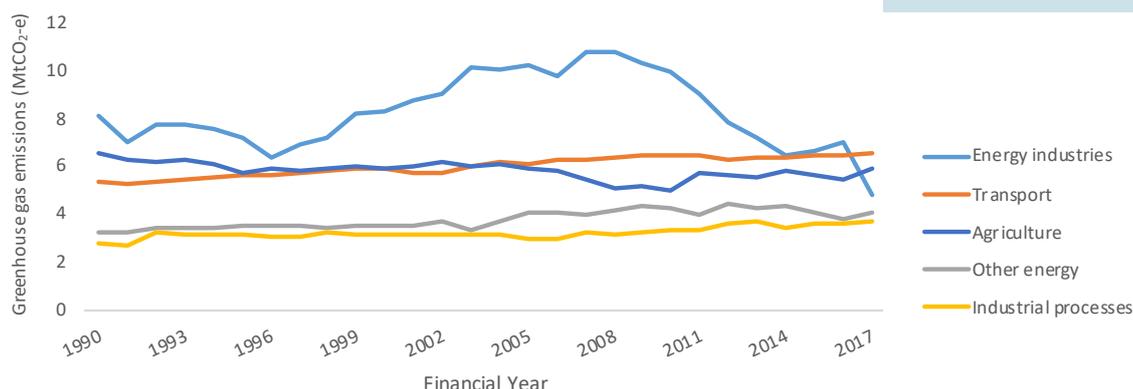
This transformation has been supported through State Government initiatives such as the \$100 million Home Battery Scheme and \$50 million Grid Scale Storage Fund.

There is an imperative and opportunity to do more. South Australia can continue the transition by optimising renewable electricity generation, switching to low emissions transport and clean fuels for heating, improving energy efficiency, reducing net emissions from agriculture, increasing natural carbon stores, and adopting cleaner industrial and waste management processes (see Figure 2).

### Renewables Reinvigorate the Spencer Gulf Region

The upper Spencer Gulf is experiencing an economic renaissance led by renewables. Over 4 gigawatts of renewable and energy storage projects are underway or under consideration, including the Bungala solar farm – one of the largest in the Southern hemisphere at 220 megawatts, and plans by the GFG Alliance for one gigawatt of large scale solar, battery storage and pumped hydro storage.

Figure 2: South Australia's greenhouse gas emissions for financial years 1990 – 2017  
Source: State and Territory Greenhouse Gas Inventory 2017



### 3. Build resilience and adapt

The State Government will support South Australian communities, industries, businesses and the environment to manage risk, harness opportunities, adapt and build resilience to climate change.

The government is improving the State's climate resilience through investment in initiatives such as stronger coastal protection, urban greening and water sensitive urban design. These initiatives are helping to safeguard coastal infrastructure and amenity, cool our towns and cities as well enhance and protect our natural and urban environments.

The government will continue to work with individuals and organisations to understand and address the challenges, such as preparing for more frequent and severe bushfires, heatwaves and floods, through land use planning reforms, and disaster risk management initiatives such as South Australia's Disaster Resilience Strategy.

#### Planning Ahead for Coastal Adaptation

The Wattle Range Council, supported by the Coast Protection Board and the Local Government Association, has worked with the local community to develop a coastal adaptation plan for Southend in response to sea level rise. In some areas the community decided to plan for a managed retreat from the existing coastline rather than further costly, engineering solutions.

### 4. Provide accessible information

The State Government will provide high quality, accessible information and build capacity for South Australians to respond to climate related risk and opportunity.

High quality, accessible information about climate change and its impacts is fundamental to building the capacity of community, business and industry to manage risks and take advantage of opportunities.

The government provides information on current and future climate impacts at <https://data.environment.sa.gov.au/Climate>. Research and development programs, such as the Climate Applications Science Program, as well as advice, property visits and training offered by natural resources management boards help farmers and land managers to adapt to current and changing climate conditions.

A new Climate Change Science and Knowledge plan will further improve the scientific and technical information for planning and risk management, for example improving the forecasting and mapping of climate change hazards and environmental change.

#### Heat Mapping Data Helps to Cool Neighbourhoods

A new urban heat mapping tool that identifies urban hot spots is helping state and local governments and communities target measures to cool urban neighbourhoods. The tool is being used to guide tree planting and design of infrastructure such as roads to minimise rising temperatures.

### 5. Government leading by example

The State Government will embed climate risk and opportunity into government decision making and investment, and seek to achieve net zero emissions in government.

The government will lead by example by embedding climate smart thinking within planning systems, strategic decision making and operational arrangements. For example, by ensuring public infrastructure decisions consider and address climate risks and increasing efforts to reduce government greenhouse gas emissions.

Some examples of how the State Government is already making changes include shifting to low emissions vehicles (currently around 42% of the government's fleet as of June 2019) and installing solar panels on government buildings such as schools and Housing Trust homes.

#### Reducing Emissions, Reducing Costs

SA Water is working to reduce emissions and achieve zero net electricity costs from 2020-21 through solar and innovative energy storage. Not only will costs reduce but the emissions savings will be large - equivalent to planting more than 220,000 trees per year, or removing 32,000 cars from the road per year, every year of operation.

# Directions into practical action

This Directions Statement sets the policy directions and desired outcomes that will guide the work and decision making of all South Australian Government agencies.

Setting clear directions and outcomes is only the beginning.

The South Australian Government will work collaboratively with Local Government, business and industry, and communities to act on these policy directions to harness economic opportunities and reduce climate risks.

To assess progress, the South Australian Government will set performance targets and measure and communicate progress in implementing the policy directions.

Practical action is already underway and new actions are being developed to boost the government's climate change response. This includes development of a new Hydrogen Action Plan and Electric Vehicle Strategy. The Premier's Climate Change Council is working with government agencies to develop a new whole of government climate change strategy including practical initiatives, performance targets and measures.

The government will regularly review and adjust its approach based on the latest science and community expectations.

## A Climate Smart Future

**By progressing the five policy directions and taking practical action on climate change, the South Australian Government is working to achieve the following outcomes:**

- a climate smart state that is more liveable and resilient
- jobs and growth that are low emissions and socially responsible
- net-zero emissions for South Australia by 2050.





## More information

More information on the work of the South Australian Government in addressing climate change can be found at [www.climatechange.sa.gov.au](http://www.climatechange.sa.gov.au)

Cover image: Citizens Own Renewable Energy Network Australia Inc (CORENA)



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