

South Australia

Leading the way to a green economy

CONSERVE
SUSTAIN
PROSPER



Government
of South Australia

A Climate Smart South Australia has it all



We enjoy a temperate climate, a stunning natural landscape, share it with a diverse and welcoming population, and revel in a vibrant capital city.

South Australia is committed to reaching more than 50% reduction on 2005 emissions levels by 2030 and net zero emissions by 2050.

We have one of the world's highest proportions of renewable energy generation, substantial land, solar and wind resources, and supplies of the minerals needed for low emissions technology.

South Australia is on-track for 100 percent renewable energy generation by 2030, and is developing a world class renewable hydrogen industry.

We are leaders in waste management and the circular economy, and sustainable water management driven by necessity and innovation.

We are leading a bold greening agenda to cool our capital city with trees and support wildlife; and are investing in nature based solutions that restore coasts, improve biodiversity, support sustainable agriculture and sequester carbon in soils, plants and coastal environments.

A world class innovation ecosystem and capabilities in space, artificial intelligence, data analytics and cyber security offer advanced thinking and potential in the development of sustainable technology and new low emissions industries.

All this and more makes South Australia a great place to live, a brilliant place to visit, and an innovative, safe and prosperous place in which to do business.

I invite you to find out more about this great part of the world. Let me tell you more about South Australia and how we are responding to the challenges of a changing climate.

A stylized, handwritten signature in white ink.

David Speirs MP
Minister for Environment and Water





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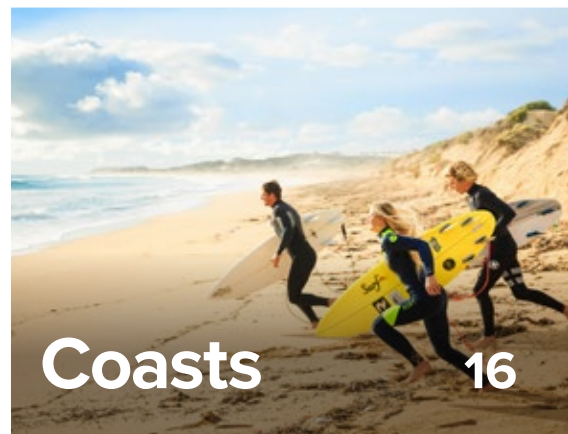
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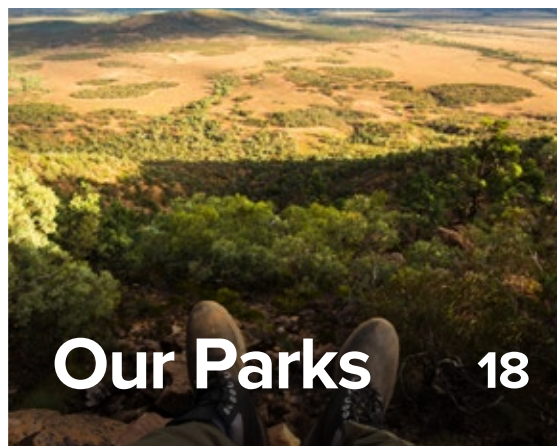
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Climate change

South Australia is a leader in climate smart planning and action.

South Australia's abundant renewable energy resources, land, infrastructure, expertise and access to key trade markets enables us to grow innovative, low emissions businesses and tap into increasing demand for clean energy and climate smart goods and services.

Since 2005, South Australia has reduced net emissions by 33 percent while its economy has grown.

The state has a long history of action to reduce the adverse impacts of climate change and to capture the opportunities in climate change adaptation.

Our areas of focus



Low emissions industries and jobs



Build business and community resilience



Renewable energy and storage



Attract investment and people to SA



Electric and clean fuel transport



Increase carbon storage



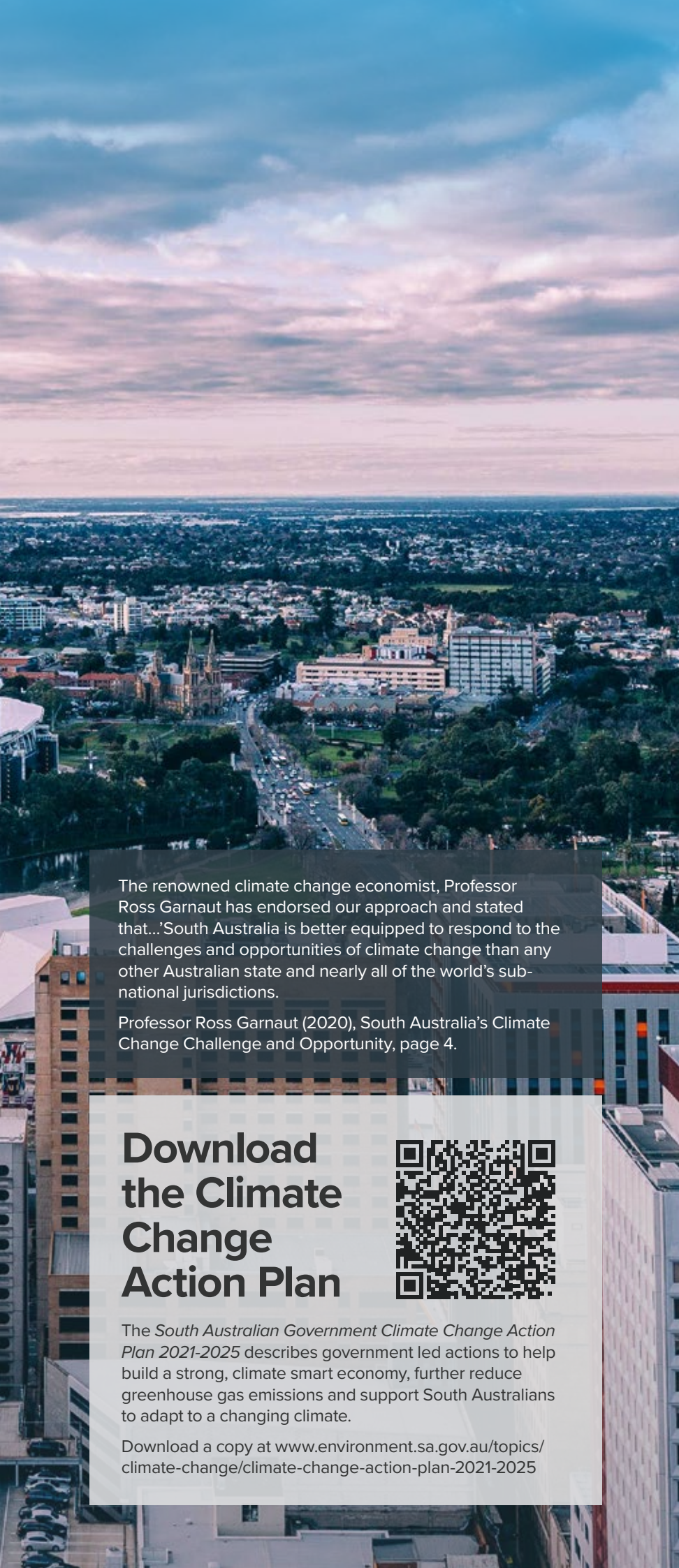
Innovative, climate smart agriculture



Circular economy

Success looks like

- a liveable, resilient and climate smart South Australia
- sustained and inclusive low emission jobs and growth
- a net-zero emissions state by 2050
- 50 percent net reduction in state emissions from 2005 levels by 2030



The renowned climate change economist, Professor Ross Garnaut has endorsed our approach and stated that... 'South Australia is better equipped to respond to the challenges and opportunities of climate change than any other Australian state and nearly all of the world's sub-national jurisdictions.

Professor Ross Garnaut (2020), South Australia's Climate Change Challenge and Opportunity, page 4.

Download the Climate Change Action Plan



The *South Australian Government Climate Change Action Plan 2021-2025* describes government led actions to help build a strong, climate smart economy, further reduce greenhouse gas emissions and support South Australians to adapt to a changing climate.

Download a copy at www.environment.sa.gov.au/topics/climate-change/climate-change-action-plan-2021-2025

Greener urban landscapes

South Australia has a vision for its capital city to create a cooler, greener, wilder and climate-resilient Adelaide that celebrates our unique culture.

Green Adelaide is a South Australian government supported organisation that is delivering this vision through partnerships, education, influence and investment in Adelaide's people and the environment.

Our seven priorities

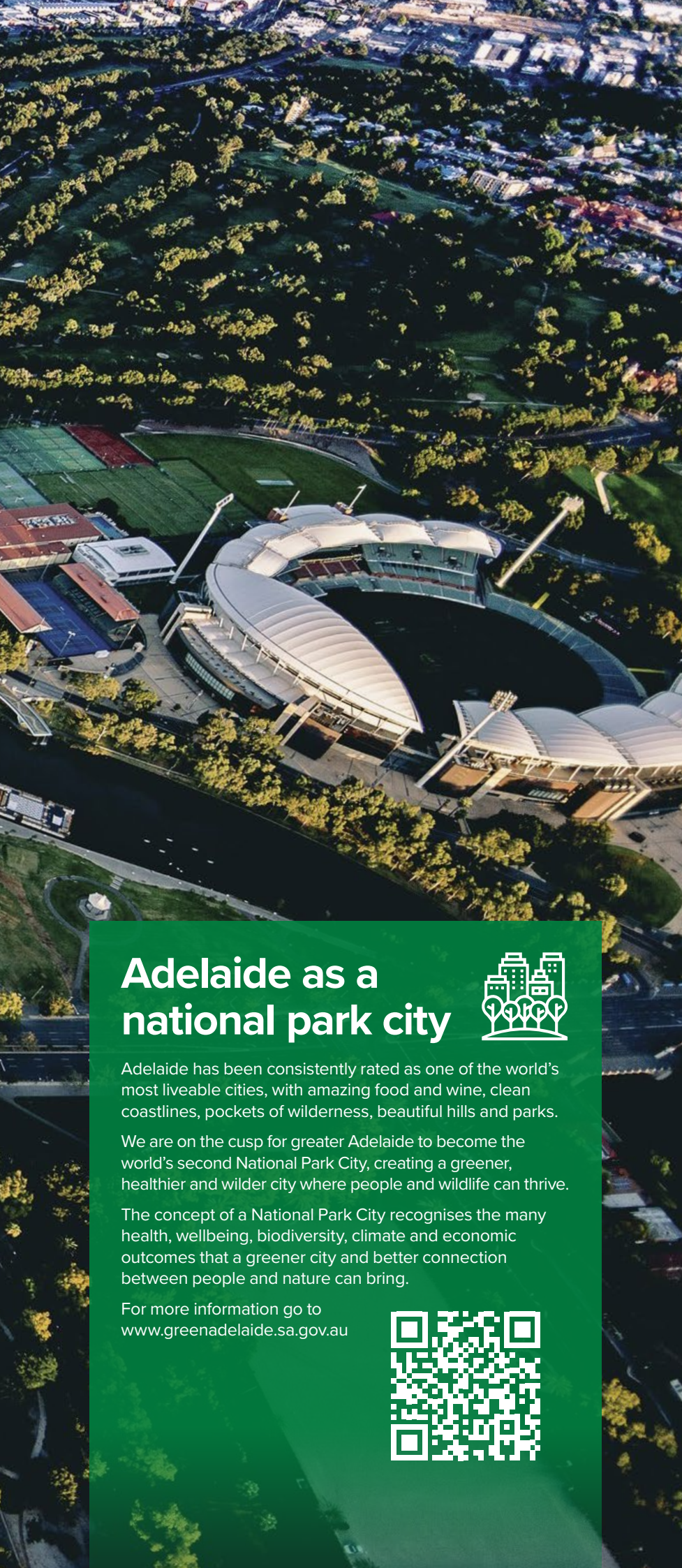
- Coastal management
- Urban water resources and wetlands
- Green streets and flourishing parklands
- Water sensitive and biodiversity sensitive urban design
- Controlling pest plants and animals
- Nature education
- Fauna, flora and ecosystem health in the urban environment

Some recent initiatives:

- Greener Neighbourhoods invests with local governments to increase greenery, reduce urban heat and improve the natural environment. Since 2019, the program has resulted in more than 8,500 trees planted across metropolitan Adelaide.
- The health of the River Torrens, Karrawirri Parri, which flows through the heart of Adelaide is being restored to improve water quality and ecosystem health in the river. This has seen numbers of native fish increase, including self-sustaining populations of the threatened freshwater catfish.
- Water Sensitive SA supports government, industry and community to mainstream water sensitive urban design and integrated water management practices that enhance wellbeing and ecological health.

We are also supporting re-wilding projects, creating the new Glenthorne national park in Adelaide's southern suburbs, and opening our reservoirs for recreational activities for the first time – further laying the groundwork for Adelaide to become a National Park City.





Adelaide as a national park city

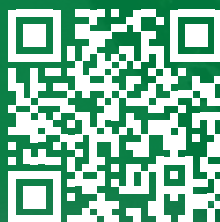


Adelaide has been consistently rated as one of the world's most liveable cities, with amazing food and wine, clean coastlines, pockets of wilderness, beautiful hills and parks.

We are on the cusp for greater Adelaide to become the world's second National Park City, creating a greener, healthier and wilder city where people and wildlife can thrive.

The concept of a National Park City recognises the many health, wellbeing, biodiversity, climate and economic outcomes that a greener city and better connection between people and nature can bring.

For more information go to
www.greenadelaide.sa.gov.au



Renewables

South Australia's aspiration is to be a net 100% renewable energy producer by 2030.

Over 60% of South Australia's electricity was generated by wind and solar, backed by gas and battery storage in 2020-21. The Australian Energy Market Operator forecasts this could rise to around 85 percent by 2025-26.

We have attracted an estimated A\$6 billion investment in large-scale renewable energy and storage projects to date, with over A\$20 billion in the investment pipeline.

We are focused on

- large-scale renewable energy generation and storage such as wind, solar PV, solar thermal, batteries, pumped hydro, compressed air and thermal storage
- distributed energy resources such as rooftop solar, bioenergy and batteries
- energy efficiency and demand management
- renewable hydrogen production, use and export
- uptake of zero emission vehicles and investment in charging and refuelling infrastructure
- supply-chain development of low-carbon technologies
- research and industry partnerships in low carbon technologies.

South Australian government recent projects



A\$118m Home Battery Scheme

Our \$118 million Home Battery Scheme supports installation of home battery systems on 40,000 South Australian homes, complemented by funding from the Clean Energy Finance Corporation for low interest loans for the subsidised battery systems and new or additional solar (if required).



A\$50m Grid Scale Storage Fund

The fund aims to accelerate the roll-out of grid-scale energy storage infrastructure, address the intermittency of South Australia's electricity supplies and provide important grid stabilisation services.



A\$30m Demand Management Trials Program

The program aims to show how new and distributed technologies can help make the grid more efficient and reward consumers for managing their own demand by funding trials of demand response, demand aggregation and integration of distributed generation assets.



Project EnergyConnect

Project EnergyConnect, a South Australia-New South Wales Interconnector, will support the expansion of the renewables sector by enabling green energy produced in South Australia to be exported outside the state, while providing increased power system reliability.

One of the world's largest lithium-ion battery near Jamestown, South Australia

Established industries



Solar

We have one of the best climates for solar anywhere in the world, with three large scale solar farms and one of the highest per capita levels of rooftop solar installed anywhere in the world. Solar PV generated over 20% of South Australia's electricity in 2020-21.



Wind

We have world class wind resources, with 22 wind farms in operation and two under construction. Wind generated over 40% of South Australia's electricity in 2020-21, the highest percentage share of any Australian state or territory.



Battery

South Australia has the highest uptake of residential batteries in Australia and has four grid-scale batteries, headlined by the world-renowned Hornsdale Power Reserve built in 2017 and expanded in 2019.

Future-ready



Hydrogen

South Australia has the wind, sun, land, infrastructure and skills to be a world-class producer, user and exporter of renewable hydrogen.



Electric Vehicles

The South Australian Government is rolling out its Electric Vehicle Action Plan to accelerate the uptake of electric vehicles. This includes co-investing with the private sector to develop a state-wide charging network, running smart charging trials on how electric vehicles can support the power grid, and providing subsidies for the purchase of a new electric vehicle.



Sustainable technology minerals

As we move from 70% to 100% renewable energy by 2030, South Australia is developing 'green' minerals and processing industries to supply copper and other critical minerals across the globe, for low emission technologies including electric vehicles and renewable energy technology.



Hydrogen

South Australia has the wind, sun, land, infrastructure and skills to be a world-class producer, user and exporter of renewable hydrogen.

In September 2019 the South Australian government released *South Australia's Hydrogen Action Plan*. It sets out 20 key actions across five areas to realise the vision of leveraging the State's competitive advantages to become a world class hydrogen supplier. These key areas being:

1. facilitate investments in hydrogen infrastructure
2. establish a world-class regulatory framework
3. deepen trade relationships and supply capabilities
4. foster innovation and workforce skills development
5. integrate hydrogen into our energy system.

Download *South Australia's Hydrogen Action Plan* at www.hydrogen.sa.gov.au

The South Australian government has to date committed more than \$40 million in grants and loans to the development of three megawatt-scale renewable hydrogen projects.

**Australian Gas Networks (AGN)
– Hydrogen Park South Australia**

AGN recently launched its \$14.5 million demonstration project comprising a 1.25 megawatt (MW) electrolyser at the Tonsley Innovation District in Adelaide's southern suburbs. The project is a first step towards decarbonising South Australia's gas network, with 700 homes now receiving gas blended with hydrogen.

**The Hydrogen Utility™ (H2U)
– Eyre Peninsula Gateway**

Australian hydrogen infrastructure company H2U is developing a world leading \$240 million hydrogen project that will see the installation of a 75MW electrolyser near Whyalla, to produce renewable hydrogen and renewable ammonia.

Neoen Australia – Hydrogen Superhub

Neoen is investigating development of a renewable hydrogen production facility powered by its Crystal Brook Energy Park.

These projects will generate learnings for industry and regulators, grow community awareness and understanding and develop workforce skills.

Hydrogen Export

Port Bonython, in the Upper Spencer Gulf region, is being developed as a hydrogen export hub.

South Australia is exploring export opportunities from South Australia to Asia, and has produced a hydrogen export modelling tool and prospectus for use by industry (visit hydrogenexport.sa.gov.au).

In 2021, South Australia and the Port of Rotterdam executed a Memorandum of Understanding to study hydrogen export from South Australia to Europe.



Circular economy

In South Australia you can see the circular economy in practice.

South Australia is a world leader in waste management, recycling and resource recovery with more than 80% of the state's waste diverted from landfill.

South Australia is well known for world leading initiatives such as:

- container deposit legislation in place since 1977
- bans on single use plastic bags introduced in 2009
- landfill bans on a range of materials including e-waste and whitegoods
- high-performing recycling systems
- industry and business incentives to reduce energy, increase material efficiency and reduce costs
- household hazardous waste infrastructure
- Australia's first disaster waste management plan
- investment in infrastructure, innovation and community education.

In 2020, the South Australian government was the first jurisdiction in Australia to implement legislation to reform single-use plastics.

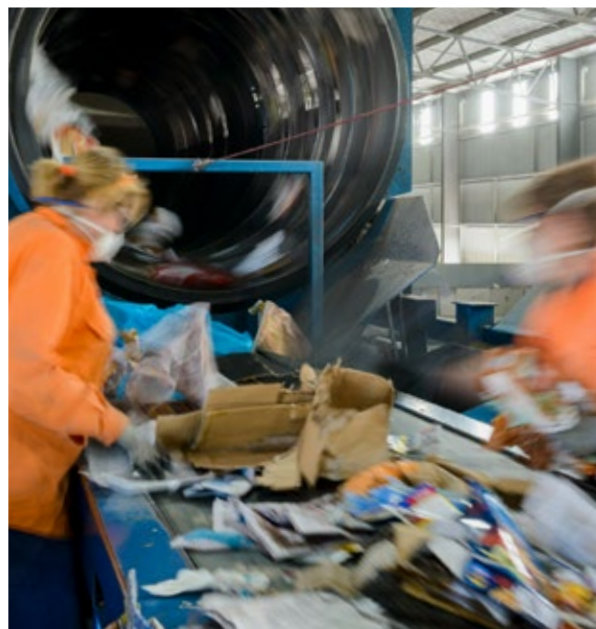
In 2021, South Australia's resource recovery industry received significant co-investment from the South Australian and Australian Governments for eight new projects worth \$111 million to build and modernise recycling infrastructure for waste material. This will significantly boost South Australia's capability to recover used tyres, glass, plastic and paper and cardboard.

South Australia's circular economy has potential to generate 25,700 jobs and reduce greenhouse gas emissions by 27% by 2030.

**South
Australia's
achievements**



More than
80% of waste
generated in
South Australia
is diverted from
landfill



40%

40% of waste water generated in South Australia is recycled



8GL

Nearly 8GL of stormwater is harvested per year for reuse



60%

Over 60% of South Australia's energy comes from renewable sources



2020

In 2020, the South Australian government banned single-use plastics

Climate Smart Agriculture

Food, wine and agribusiness are important drivers of the South Australian economy. In 2019-20 food, wine and agribusiness generated A\$14.1 billion in revenue.

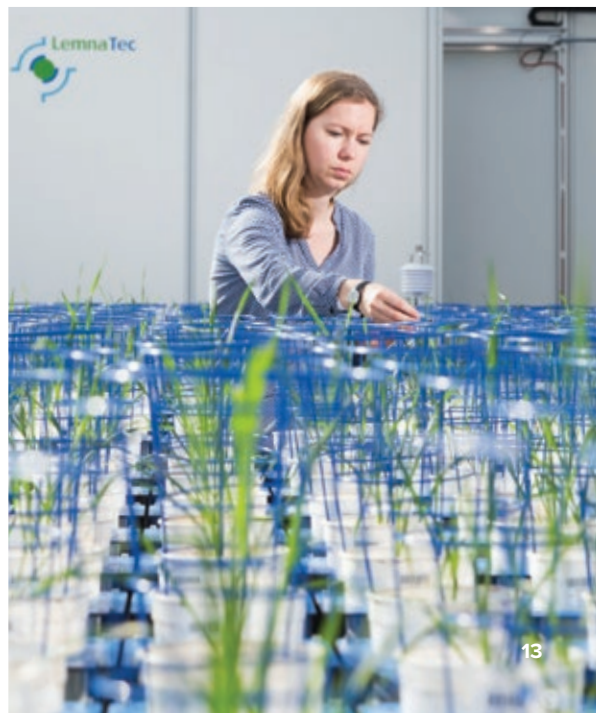
South Australia has a reputation for clean, safe and sustainably produced food, wine and agricultural produce.

The state's primary producers and agri-businesses are experienced in adapting to variable climate and market conditions. For example, improved farming practices and varieties have seen 35 percent higher average grain yields than 10 years ago, and production in recent drought years is more than double what it was during comparable droughts of the mid-2000s.

World-class researchers in crops and horticulture, pastures and sustainable resources, and food safety and innovations, such as the world renowned Waite Research Precinct, support this sector to adapt and harness climate smart opportunities.

In addition to adapting existing industries, some emerging climate smart opportunities taking shape now in South Australia include:

- Development of a commercial seaweed industry that turns red seaweed into a feed supplement for livestock and can reduce their methane production by up to 90 percent.
- Expansion of carbon farming to sequester carbon and improve land management and agricultural productivity.
- Opportunities to scale up use of biomass – such as waste from agricultural crops, livestock, wood processing and food waste – to produce soil improvement products, bioplastics and energy.
- Initiatives to expand pulse breeding and establish a plant-based protein manufacturing sector in South Australia.



Climate Resilient Water Supplies

As the driest jurisdiction in the driest inhabited continent on earth, South Australia's approach to water has required a delicate balancing of economic, environmental and social outcomes – this in turn has spurred significant innovation and unique water capabilities.

South Australia is planning for, and delivering climate resilient water supplies, water reuse and efficient use of water. This includes expanding access to alternative water sources through treatment of lower quality groundwater, developing new supply and storage infrastructure and improving water use efficiency and demand management.

The South Australian water sector is well placed to partner internationally to support improved water outcomes as our climate changes.

We are known world-wide for:



irrigation efficiency



small scale wastewater treatment and large-scale re-use



high levels of rainwater (stormwater) capture, treatment and managed aquifer recharge



water infrastructure optimisation and smart water systems, including satellite-based water monitoring technologies



groundwater assessment and modelling



desalination



water quality testing and management



basin-scale and integrated water planning, management and project design

Water recycling

Around one third of South Australia's treated wastewater is used for agriculture and urban parklands. For example, recycled water is used for high-value intensive food production in the Northern Adelaide Plains, to grow grapes in the world renowned McLaren Vale wine region, and to irrigate the Adelaide Park Lands.



Opportunities for collaboration

South Australia's water sector is open to collaboration on:

- providing access to innovative technologies and services
- investment and trade pathways for businesses entering water markets in South-East Asia and the Indo-Pacific
- joint research initiatives
- targeted skill and capability development programs
- policy advice and services for governments.



Coasts

Our stunning coastline is around 5,000 km long, and we are securing its future in a changing climate.

Our coastal environments include beaches, dune systems, tidal waters, wetlands and cliffs that provide vital habitat for our flora and fauna and an important foundation for our tourism industry – attracting over 9 million visitors each year.

Our coastline also protects development and housing from flooding and erosion.

Initiatives to build coastal resilience across our state, include:



- completing a sand recycling pipeline to transfer beach sand from where it builds up to eroding areas, supplemented by the addition of large volumes of sand into the beach system, to keep Adelaide's beaches sandy



- Australia's largest seagrass restoration project, which aims to re-establish around 10 hectares of seagrass off the Adelaide metropolitan coastline – and create a body of knowledge that can be shared world-wide



- building shellfish reefs off our coasts, which will bring more fish, cleaner water and increased biodiversity
- blue carbon projects.

Exploring our 'blue carbon' potential

South Australia is taking a lead in blue carbon. The Blue Carbon Strategy for South Australia guides action to protect our coastal environment, while reducing greenhouse emissions and supporting our coastal communities.

One example is the restoration of tidal wetlands, adjacent to the globally important Adelaide International Bird Sanctuary National Park, to the north of Adelaide. Restoring the wetlands will help protect the coast, improve habitat for migratory shorebirds and fisheries, and provide a blue-carbon opportunity.

Another initiative is our \$1.2 million partnership with The Nature Conservancy and COMON Foundation to restore up to 2,000 hectares of wetlands across hundreds of kilometres in St Vincent and Spencer Gulfs.





Our parks

South Australia has nature like nowhere else, and we want to share it with the world.

We have 356 parks covering a fifth of our vast state, and a network of 19 marine parks covering nearly half of our marine waters.

Our parks conserve a diverse range of vitally important landscapes, plants and animals including heathlands, woodlands, deserts, beaches, coasts, marine ecosystems, and culturally significant places.

Local communities are engaged in on-going park management.

Many parks are cooperatively managed with Aboriginal people and protect places that help to sustain the cultural heritage of Aboriginal nations.

In the face of a changing climate we are committed to ensuring that our parks continue to conserve special places and natural values, and enable people to enjoy the benefits they bring.

We are undertaking world-leading work in threatened species recovery and species reintroduction, such as with the yellow-footed rock-wallaby and western-quoll, and developing innovative planning tools and responses to reduce the risks of more frequent bushfires.

Work is underway to assess critical climate change impacts for ecosystems to inform long term adaptation planning.

Our Parks system includes internationally-recognised tourism destinations such as Seal Bay and the Flinders Ranges. The South Australian government is leading the activation of nature-based tourism through targeted investment in key park assets, and a focus on partnerships with the private sector to develop world-class destinations and tourism products.



Parks in South Australia cover

21.1 million hectares

an area about the size of the UK.

Our largest single reserve (Munga Thirri/Simpson Desert) is the size of Belgium (30,000km²).



85%

of our marine species are found nowhere else in the world.



Home to over

450 bird species

with more than **250** recorded species within 1.5 hours drive of our capital city



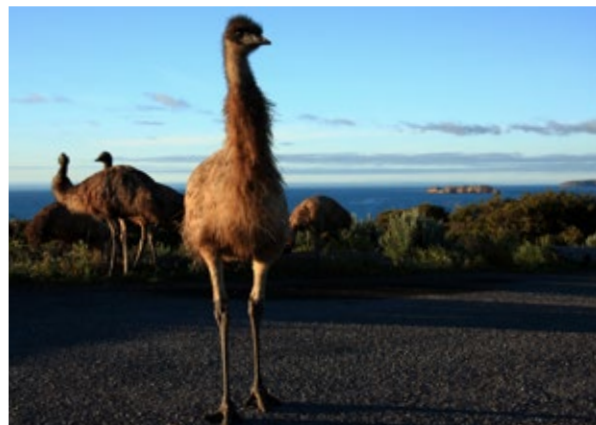
Bushfire recovery

South Australia's 2019-20 bushfires burnt around 279,000 hectares of land of which 90,000 hectares was national park land.

More than 90% of the largest national parks on Kangaroo Island were affected by the fire, along with critical habitat for threatened species such as Kangaroo Island Dunnart and Glossy Black Cockatoo.

Thankfully, our parks and unique wildlife are generally recovering well, largely due to a rapid and collaborative recovery response, involving the National Parks and Wildlife Service, local communities, NGOs and the Australian Government.

In 2020-21, the State Government committed nearly \$100 million to equip the state with stronger resources for planning, preparation and response to future catastrophic bushfire events.





SOUTH AUSTRALIA FAST FACTS



South Australia
covers almost
1 MILLION
SQUARE KILOMETRES

POPULATION

1.35 Adelaide
MILLION



1.78 South Australia
MILLION

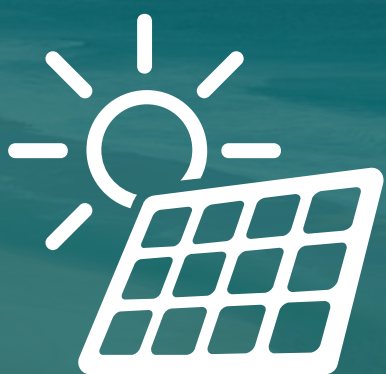


Adelaide is currently
RANKED

#3
most liveable city
in the world

South Australia
has achieved

OVER 60% renewable
energy
generation **in around 15 years**



OVER 1 in 3 homes
in South Australia have
solar PV systems installed

MORE THAN 80% of waste
is diverted from landfill



In 2021 South Australia produced

305,000 tonnes of copper

enough to power



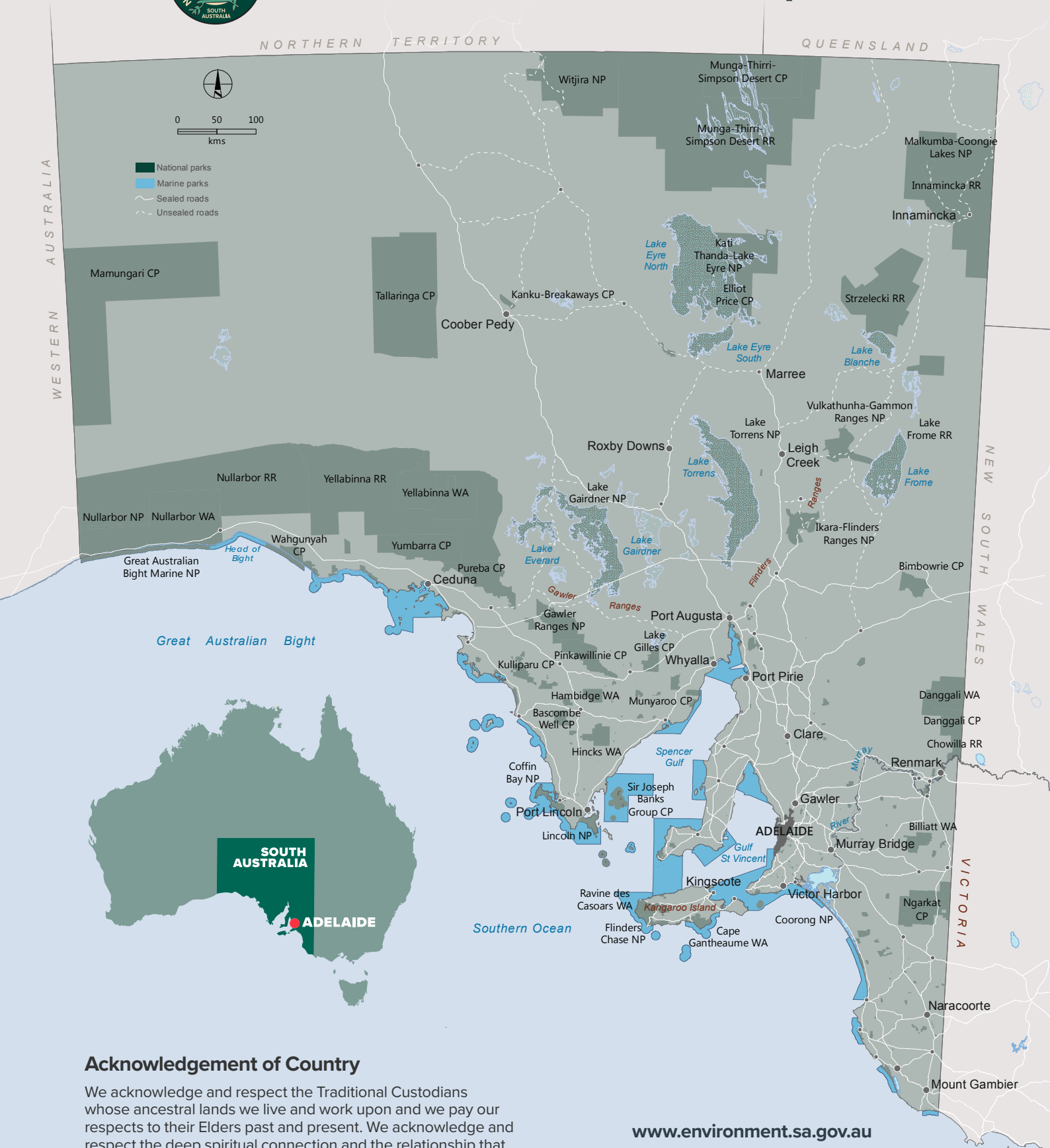
3.4 MILLION
electric vehicles



or **70,000**
wind turbines



South Australia's national parks



Acknowledgement 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 the deep spiritual connection and the relationship that Aboriginal and Torres Strait Islander 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.

www.environment.sa.gov.au

www.renewables.sa.gov.au

www.greenindustries.sa.gov.au



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