



## Partner region profile – South Australia

Energy Transition Platform | May 2016

### Socio-economic facts



South Australia, Australia

**Population:** 1,688,700 | **Area:** 1,043,514 km<sup>2</sup>

**Landscape:** arid and semi-arid rangelands, with low mountain ranges

**GDP:** US\$98,629 million (2015) | **GDP/capita:** US\$58,306

**Economic sectors:** 50% services (healthcare, education, finance) | 7.9% manufacturing (automotive, pharmaceuticals, defense technology) | 4.4% mining (iron, steel, coal).

**Jurisdictional power:** highly decentralized

**Key department:** Department for Water, Energy and Environment

The mining industry in South Australia began developing in the late 19<sup>th</sup> century, while other important industries such as manufacturing emerged after World War II. But since the 1990s, there has been a decline in the manufacturing sector, with a shift towards services and high-technologies. In fact, between 1990 and 2000, 15,600 people lost their jobs in the manufacturing sector. The number of people employed in this sector fell from 12.9% to 10.5% between 2006 and 2011<sup>1</sup>, while the service sector accounted for more than 70% of employment<sup>2</sup>.

On the mining side, large brown coal deposits at Leigh Creek have been exploited since 1954, providing employment to more than half of the population there. However, the coal mine closed in late 2015, and the power stations fueled with its coal will cease operations in 2016<sup>3</sup>.

<sup>1</sup> <http://profile.id.com.au/australia/industries?WebID=130>

<sup>2</sup> <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1345.4Feature%20Article1Apr%202011>

<sup>3</sup> <http://www.abc.net.au/news/2016-01-22/sa-outback-town-leigh-creek-for-sale/7107922>



Natural gas fields have been exploited since 1963 with pipelines being built to Adelaide and Sydney, and it is still the largest source of electricity today<sup>4</sup>.

### Energy system and energy policy

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South Australia is leading the country in the uptake of renewable energy with wind and solar photovoltaics (PV). It had 1,735 MW of installed renewable energy capacity in 2013, with 28% of its electricity demand supplied by wind power and a quarter of households equipped with solar PV panels<sup>5</sup>.

The state's renewable energy target of 33% was achieved ahead of schedule and exceeded with 39% of its electricity powered by renewables in 2014. The government announced it will set a 50% renewable energy target next year to be achieved by 2025.

<b>Energy resources (in-ground &amp; production)</b>	In-ground resources include large quantities of coal and uranium  Produces gas (46%), wind power (26%), lignite coal (14%) and solar power (10%)
<b>Energy mix: consumption by sources and sectors</b>	Sources: while the consumption of thermal electricity and natural gas increased, that of petroleum products stagnated and coal demand decreased  Sectors: transport (30%); manufacturing (20%); electricity generation (17%); mining (11%); residential (11%); commercial (7%); agriculture (2%)
<b>Renewable energy consumption</b>	Renewable energy contributes to 41% of the electricity supply
<b>Imports/exports</b>	Exports uranium and coal
<b>Energy market structure (privatized/monopolized)</b>	Privatized market for electricity and natural gas since 2003 Remaining regulation through the Australian Energy Market Commission and the Australian Energy Regulator (e.g. retail prices)

### Renewable energy plan for South Australia 2011

Framework document to facilitate the implementation of policies that will help develop the state's renewable energy sector, organized around 5 pillars:

- dissemination of information to ensure the investment market is fully informed;
- efficient regulation and competitive regime;
- addressing market failure created by specific regional circumstances;
- leading by example to build investor confidence; and
- acting early to prepare for national policies.

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<sup>4</sup> <https://www.sa.gov.au/topics/water-energy-and-environment/energy/energy-supply-and-sources/non-renewable-energy-sources/gas/sa-gas-industry>

<sup>5</sup> Climate Council "The Australian renewable energy race: which states are winning or losing?"  
<<http://www.climatecouncil.org.au/uploads/ee2523dc632c9b01df11ecc6e3dd2184.pdf>>



## Low Carbon Investment Plan (December 2015)

Document setting out how to achieve the target of US\$10 billion investment in low carbon energy generation by 2025:

— *Competitive policy and regulatory environment*

e.g. the Pastoral Land Management and Conservation (Renewable Energy) Amendment Act 2015 enables wind farm development and the pastoral activities to coexist.

— *Relevant information for investment*

e.g. the Bio-energy Roadmap facilitates investment by providing information relating to the value, demand and quantities of bio-energy resources in a given location.

— *Government procurement*

e.g. the Government owns buildings in which it is planning to install battery storage systems up to a value of US\$1.1 million.

e.g. the Government has released an expression of interest for up to all of its load to be sourced from low carbon generation.

— *External funding leverage*

e.g. the Government supported the development of a hybrid renewable energy plant (Cooper Pedy renewable energy project) through the facilitation of approvals for land access and subsidies for electricity.

## South Australia's strategic plan

This broad plan aims to safeguard and enhance the wellbeing of South Australians. Addressing climate change and providing reliable and sustainable energy sources is one way to achieve that aim. Three main targets have been set:

- renewable energy to provide 33% of the state's electricity production by 2020 (already achieved ahead of schedule);
- renewable energy to provide 50% of government's own electricity needs by 2014; and
- limit on the carbon intensity of electricity generation to 0.5 tons of CO<sub>2</sub>/MWh by 2020.

### Climate targets:

Reduce GHG emissions by 60% by 2050

Generate 50% of the State's grid electricity from renewables by 2025

Improve energy efficiency of government buildings by 30% by 2020/of residential buildings by 15% by 2020

### Climate plan:

[South Australia's Climate Change Strategy 2015-2020](#)

## Energy transition experience

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South Australia has started a transition from a fossil fuel-dominated energy system to one mainly based on renewable energy.

Drivers behind this energy transition include the significant economic opportunities that businesses see in developing low carbon plans; the advantages of being a first mover in innovative clean energy policies; the willingness to fight climate change; the necessity to end reliance on unsustainable and unprofitable fossil fuels in the long-term; and the ambition to drive the transition and inspire other states.

With 41% of state's electricity powered by renewable sources, and the recent completion of new wind farms<sup>6</sup>, South Australia's renewable capacity for electricity generation has the potential to reach 100%. During some periods the renewable energy generation was far greater than the state requirements. However, challenges lie in the storage of the energy and in the risk of equipment failures in the generation of renewable energy.

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<sup>6</sup> <http://reneweconomy.com.au/2014/450m-snowtown-2-wind-farm-to-open-ahead-of-schedule-76249>



One priority, in addition to developing technologies for energy storage, is the electrification of transport - from bus and private car networks to the whole fleet of government vehicles.

South Australia has been an early mover in transitioning to a clean energy system. This can be explained by the diversity of its renewable energy sources - located throughout the state with low population densities - and the early policy frameworks providing consistency and certainty for investors to take advantage of these resources.

## Climate policy and instruments

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As a region, South Australia has positioned itself as a leader on climate action in Australia, with a net drop in greenhouse gas (GHG) emissions of 9% between 1990 and 2013, while gross state product grew by over 60%.

### **South Australia's Climate Change Strategy 2015-2020 – Towards a low carbon economy**

Framework released in November 2015 to support the target of achieving net zero GHG emissions by 2050 while strengthening economic opportunities. The strategy is organized around six thematic areas:

- South Australia leading on climate change action;
- achieving net zero emissions;
- showcasing carbon neutral Adelaide;
- innovating to drive a resilient and competitive low carbon economy;
- creating a prosperous and resilient state; and
- building community capacity to take action on climate change.

### **Adaptation framework – Prospering in Changing Climate: a climate change adaptation framework for South Australia**

Framework document to guide all stakeholders (including the private sector, citizens, researchers, government bodies) into the development of effective adaptation responses. Emphasis is on a region-based approach to recognize that climate change impacts vary depending on their location.

### **The Climate Change and Greenhouse Emissions Reduction Act 2007**

South Australia was the first Australian State to enact legislation on the reduction of GHG emissions. The legislation sets out targets for reducing GHG emissions and boosting renewable energy and commits the Government of South Australia to developing strategies to reduce emissions together with the private sector and civil society.

## Contact

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#### Sources:

Low Carbon Investment Plan: [http://www.renewablessa.sa.gov.au/files/dsd\\_2015-low-carbon-investment-plan\\_web.pdf](http://www.renewablessa.sa.gov.au/files/dsd_2015-low-carbon-investment-plan_web.pdf)

[South Australia's climate change strategy](#)

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