

Research on conventional gas in South East South Australia

An overview of the onshore gas industry and regional social and economic profiles

Understanding the past, present and potential future role of the gas industry in the context of the local economy is a crucial part of supporting the development of South East South Australia. This project develops a profile of the local onshore conventional gas industry and its role within the regional economy to date.

This profile can help assess how the availability of locally produced gas can influence the development of other industry sectors.

KEY POINTS

- The Limestone Coast onshore gas industry previously supplied gas to local business and industry from 1991 to around 2011.
- The South Australian government's Plan for Accelerating Exploration (PACE) Gas program is encouraging new conventional gas exploration in the region.
- Agriculture and wood manufacturing add the most value to the local Limestone Coast and Mount Gambier economies.
- Community and industry stakeholders need to consider the utility role of local onshore gas in the local economy.

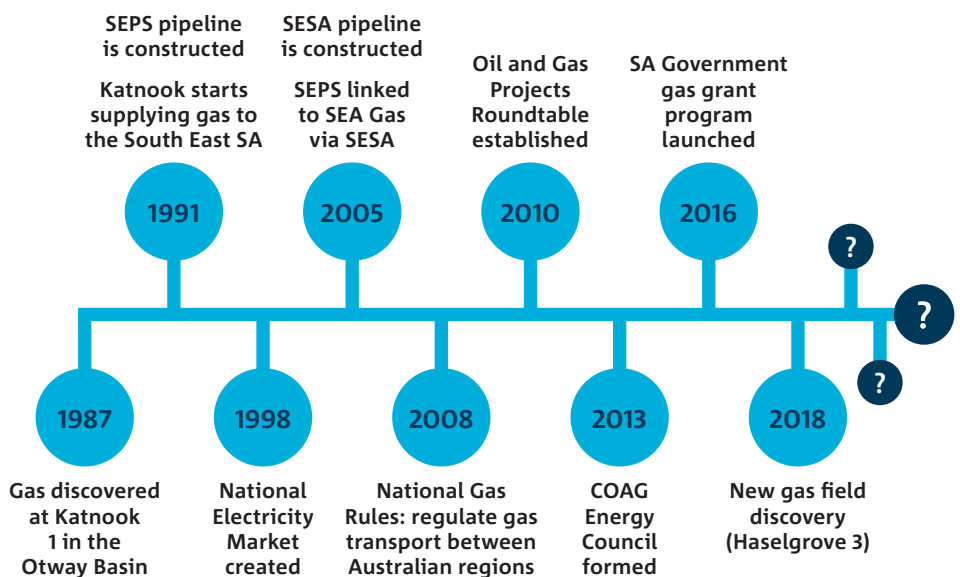
Local onshore conventional gas history

The Otway Basin in South East South Australia's Limestone Coast has been explored for resources since the 1890s. In this region, the first commercial conventional gas discovery was made at Katnook in 1987, South of Penola, followed by the discovery of the Ladbroke Grove field in 1989. As a result of these discoveries the southern part of the Limestone Coast had an active onshore gas industry during the 1990s and the 2000s, gradually diminishing in 2010, with the local Katnook Gas Plant officially being closed in 2013. Gas supplied locally was used by local businesses including timber milling, pulp and paper milling, commercial food preparation, for gas-fired power generation and for domestic use.

Gas transport infrastructure

Currently gas destined for the Limestone Coast region is sourced from offshore gas fields in the Otway Basin located near Port Campbell and the underground gas storage at Iona in Victoria.

The gas is transported from Victoria by the South East Australia Gas (SEA Gas) pipeline that links Port Campbell with Adelaide, and supplied to regional gas users via the 45 km South East South Australian (SESA) pipeline. SESA can deliver 22 terajoules of gas per day (TJ/day) to the Ladbroke Grove Power Station and 16 TJ/day to the South East Pipeline System (SEPS) at Katnook, which in turn supplies gas to Mt Gambier, Penola and Snuggery.



Timeline of the gas industry in the Limestone Coast Region. Source: Compiled by authors.

Exploration

New gas exploration for economically viable onshore conventional gas resources is underway, with new support from the South Australian government's Plan for Accelerating Exploration (PACE) Gas program. This program provides grants to gas development companies to encourage exploration, and to develop commercial arrangements with electricity generators, industrial users and retail consumers. During 2017, the PACE program allocated three grants for onshore exploration in the Otway Basin.

Companies currently carrying out exploration activities in the region are Beach Energy, Vintage Energy and Rawson Oil and Gas. Following the success of its PACE grant exploration well, Beach Energy proposes to build a new Katnook gas plant capable of processing up to 10TJ/day to replace the old Katnook facility. Additional exploration activity in the area could lead to successful discoveries in the region close to the new Katnook gas plant.

Regional energy

Introduction of significant amounts of wind energy generation in recent years has transformed the Limestone Coast region's energy mix. The total local large-scale generation capacity is around 470 megawatts (MW), comprising around 70 per cent wind energy, with gas and diesel delivering the remaining 30 per cent.

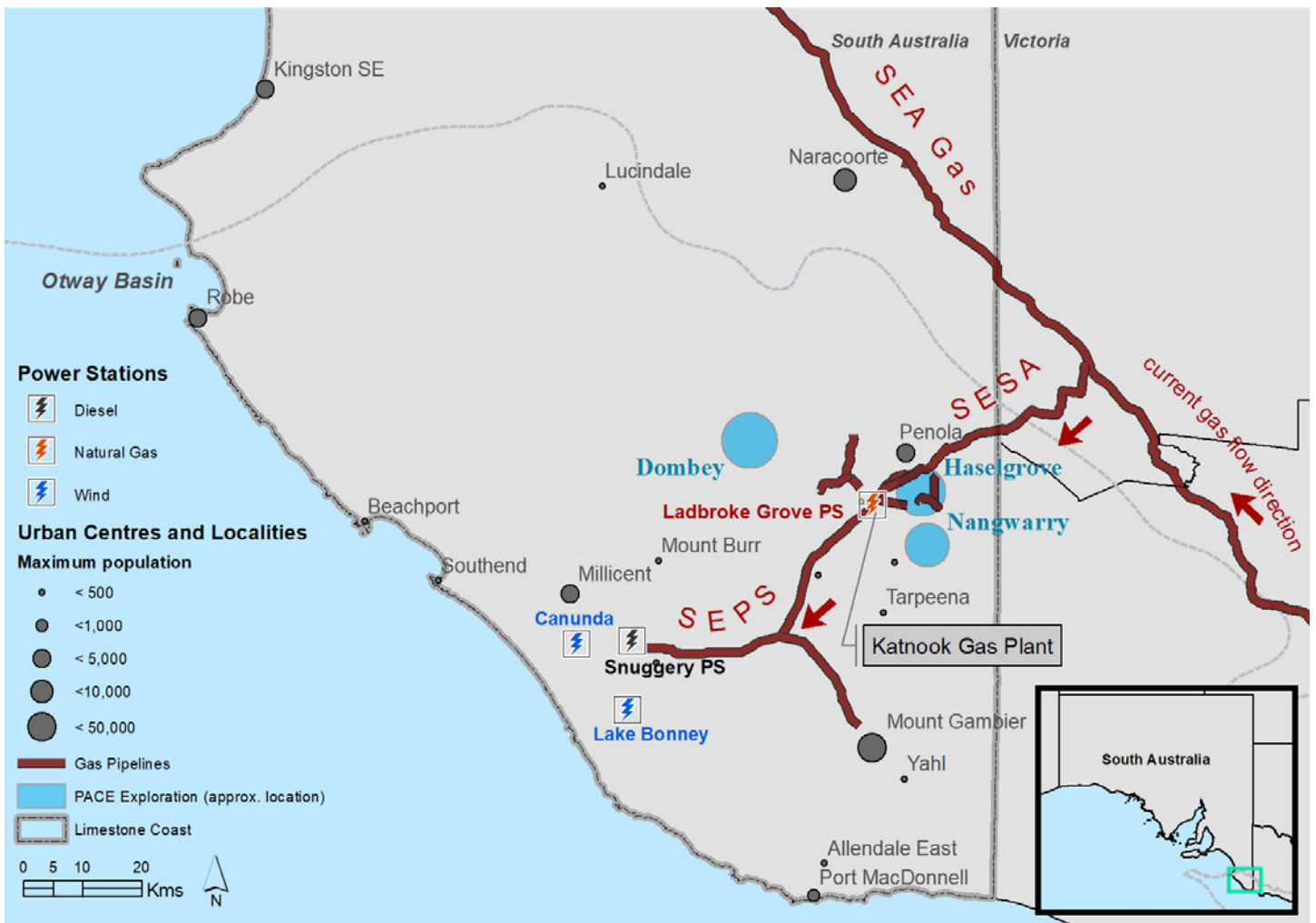
Gas-related industrial activity

Local industrial users of gas include Kimberly Clark Australia (KCA) which operates a paper and pulp mill at Millicent producing domestic paper products, the Midfield Union Dairy Company and Ladbrooke Grove Power Station. Previous

users included the Safries potato processing plant at Penola (McCain Foods) and the timber mill in Nangwarry (Carter Holt Harvey).

In recent years, the dairy processing industry has increased its presence in the region. The former McCain factory at Penola became a dairy processing plant producing milk powder developed by the Midfield Group. The Blue Lake Dairy Company processing plant opened in Tantanoola in 2016 on the site of the former Star Fries potato chip plant.

Dairy processing involves intensive energy use. An assessment of the energy use in dairy product manufacturing puts natural gas as the main source of energy (55%), followed by grid-based electricity, 29% (Dairy Australia 2013).



Limestone Coast Gas Pipelines and power stations locations in relation to the Otway Basin. Data source: SA Government.

Mount Gambier and the Limestone Coast region profiles

The Limestone Coast area stretches more than 21,000 km² with the largest urban area in the region being Mount Gambier, which is home to the second largest population in South Australia.

The population in Mount Gambier has increased from around 23,500 residents in 2001 to around 27,000 in 2016.

The 15 per cent increase in resident population is larger than the seven per cent increase in the Limestone Coast region, but smaller than the 23 per cent increase observed nationally.

A reduction in the number of young people combined with the increasing number of people above 60 years of age highlights an ageing trend in the Limestone Coast, in line with regional South Australia, and more rapid when compared with national trends.

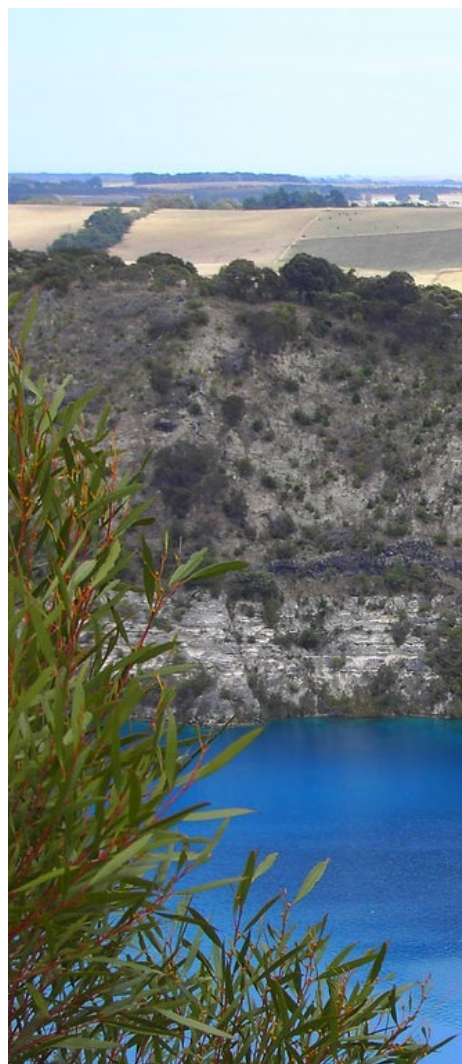


Image: Blue Lake, Mt Gambier, inspiringsa.org.au.

Local industries

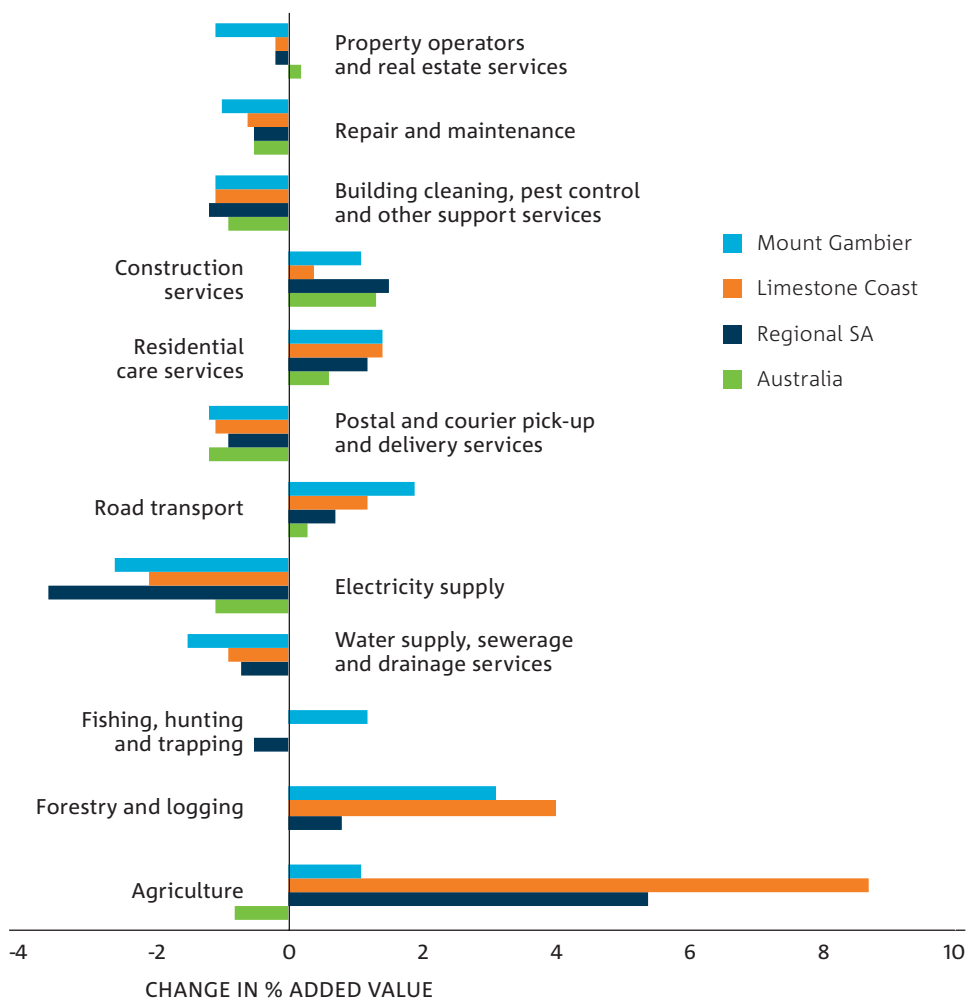
The Limestone Coast is known for premium food and wine products and has a diverse vibrant economy. The Coast's strong economic contribution is reflected in its increasing share of regional Australia's gross regional product: from 15 to 18 per cent during 2001–2018.

The contribution of industries to the total local gross product displays clear differences between Mount Gambier, the Limestone Coast and regional South Australia. The configuration of Mount Gambier's economy is more closely related to the characteristics of the Australian economy with service industries generating significant added value* to the economy. In contrast, the distribution of the Limestone Coast region industry's value added is more similar to regional South Australia.

Between 2001 and 2016, the main economic activities in Mount Gambier in terms of added value were wood and product manufacturing, retail trade, and health care and social assistance. Forestry and logging and agriculture accounted for 4.6 per cent and two per cent of the average added value during that period respectively.

The Limestone Coast region's economy was mostly driven by agricultural activities which accounted for around one-fifth of the average added value. Forestry and logging and wood product manufacturing accounted for 5.6 per cent and 3.2 per cent of the average added value during the period.

Overall the average characteristics of the Limestone Coast region economy are similar to regional South Australia. However, while mining is the second most important economic sector in regional South Australia with around 13 per cent of the average added value, mining accounts for less than one per cent in the Limestone Coast region and less than 0.5 per cent in Mt Gambier.



Subsectors with significant change in percent added value between 2001 and 2016. Data source: RDA Limestone Coast.

*Added value is a productivity measure considering how much output is generated in addition to input expenditure.

Structural change

Structural changes are occurring in the value added and jobs distribution across industries within the Limestone Coast region.

Between 2001 and 2016 the Limestone Coast region shed about four per cent of jobs while the agricultural value added to the economy increased eight per cent. This is likely due to automation and other efficiency gains in agricultural production, reducing the need for workers while contributing more to the local economy.

While Mount Gambier followed the Limestone Coast pattern in manufacturing employment, the city had the lowest percentage change in employment in agriculture, forestry and fisheries.

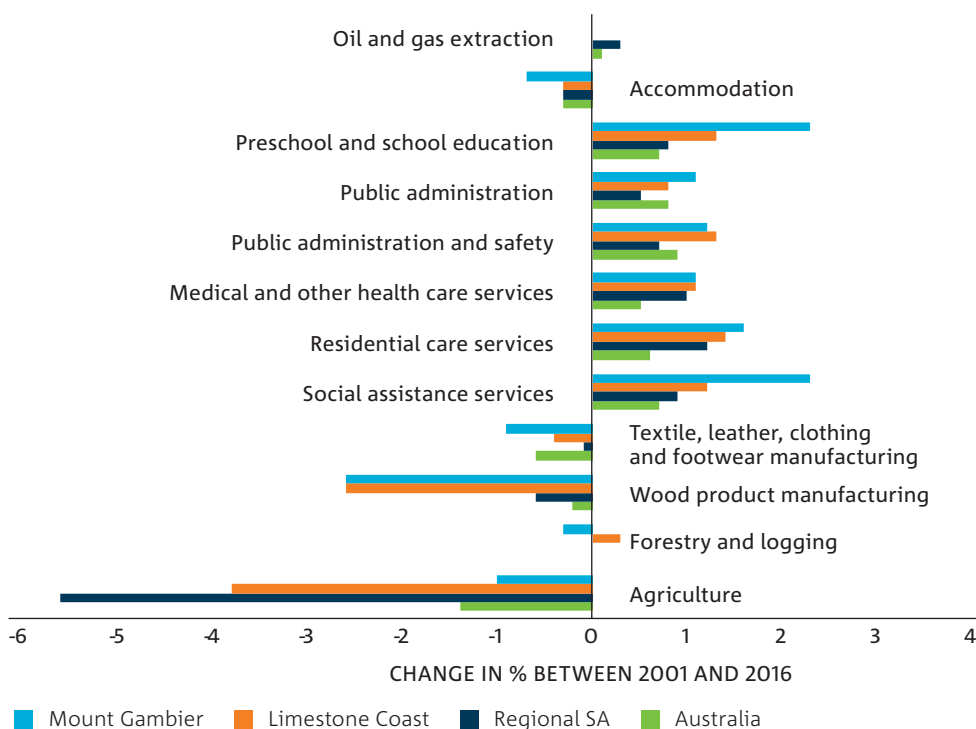
The health care and social assistance industry had the largest percent increase across all regions from 2001 and 2016.

Income

The average household income in Mount Gambier increased 27 per cent in real terms between 2001 and 2016, up from \$1,608 to \$2,044 per week. This change was smaller than the increase in income observed in the Limestone Coast region (34%) and Australia (38%) but larger than the income change in regional South Australia (19%). In 2016, the average weekly household income in Mount Gambier was lower than the income in the Limestone Coast region (\$2,555), regional South Australia (\$2,359), and Australia (\$2,824).

Education

The proportion of the population aged 15 and more years with tertiary education has increased from 2001 to 2016 in all the assessed South Australian regions and Australia. While both the Limestone Coast and Mount Gambier show a growing trend in the percentage of people with a vocational or higher degree qualification, a ten per cent gap remains when compared with national averages.



Business types with the largest change in employment between 2001 and 2016.
Data source: RDA Limestone Coast.

NEXT RESEARCH STEPS

The next objective of the research will be to develop scenarios exploring how the regional economy may evolve considering the utility role of local onshore gas.

This work will contribute to more informed public discussion regarding the gas industry and social and economic benefits and impacts.

This research and scenarios will help stakeholders consider and seek answers to questions such as:

- What role should Limestone Coast conventional gas play in the future energy mix of South Australia?
- How can the Limestone Coast region benefit from an onshore gas industry?
- How could an onshore gas industry influence the changing demographics of the Limestone Coast region?
- What are the implications for the Limestone Coast region if locally produced gas was exported to other regions?
- In the context of a globalised economy how might an onshore gas industry support the next generation of future potential industries in the Limestone Coast?

FIND OUT MORE

Check out the project website:
gisera.csiro.au/project/assessing-the-value-of-locally-produced-conventional-gas-in-sas-south-east

Watch a GISERA video on conventional gas:
gisera.csiro.au/news/unearthing-conventional-gas

ABOUT CSIRO's GISERA

The Gas Industry Social and Environmental Research Alliance (GISERA) is a collaboration between CSIRO, Commonwealth and state governments and industry established to undertake publicly-reported independent research. The purpose of GISERA is to provide quality assured scientific research and information to communities living in gas development regions focusing on social and environmental topics including: groundwater and surface water, biodiversity, land management, the marine environment, and socio-economic impacts. The governance structure for GISERA is designed to provide for and protect research independence and transparency of research. Visit gisera.csiro.au for more information about GISERA's governance structure, projects and research findings.

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