

# Scenarios for the role of conventional gas in south east South Australia

This research focuses on the different roles that the conventional onshore gas industry could play in the regional economy of south east South Australia. This research does not consider environmental or social impacts of gas development, which are covered by other GISERA research projects.

## KEY FACTS

- Researchers developed four future economic development scenarios based on a detailed historical overview of the local economy and the role of conventional gas.
- Scenarios were presented to research participants from food and fibre manufacturing, regional development agencies and government.
- Research participants selected increased economic diversity and strong gas development as the most desirable scenario but also the least likely, due to constraints on accessing gas locally.
- The second most desirable scenario was seen by research participants as the second most likely, involving slow investment in gas at the same time as growing economic diversity.
- Economic modelling of this scenario identified significant contribution to the economy and job creation (\$132 million over 10 years and 429 jobs).
- The scenario regarded as the most likely – rapid gas development with low economic diversity – resulted in few local benefits beyond the least desired business as usual scenario.
- The research found gas resources need to be both affordable and locally accessible through appropriate infrastructure in order to bring about desired outcomes.

## A different perspective

The research differs from other economic research relating to the gas industry which usually explores the impacts of unconventional gas production for sale to interstate or export markets.

This research focuses on conventional gas – a sector which has historical roots in this region and has a distinctly different economic profile to the unconventional gas industry developed elsewhere in the country.

In addition, this research is concerned with local use of the resource – i.e. the potential role for locally extracted gas to supply the energy needs of local businesses operating in south east South Australia.

## Scenario-based approach

A scenario approach was taken to help inform decisions about the future of the region.

The research helped to understand local industrial gas users' views and values, and to estimate possible outcomes in terms of how different economic futures may play out.

The research combined qualitative and quantitative data to develop four scenarios based on a detailed historical overview of the local economy and the role of conventional gas.

These scenarios were presented to stakeholders during a workshop conducted in Mt Gambier in March 2019 for feedback and refinement.



Conventional gas exploration drill rig operating in south east South Australia.



## Results

Regional economic modelling explored alternative potential futures which considered current trends and alternative futures, such as an increase economic activity in the region. Economic forecasts were based on modelling linked to the four scenarios developed in the qualitative phase.

Representatives from primary industries, local manufacturing businesses, service providers, government and other key sectors of the local economy were invited to a stakeholder workshop in Mt Gambier.

These research participants reviewed and discussed the four scenarios, and ranked them in terms of desirability and perceived likelihood. Combining the results of the qualitative and quantitative analysis provides important insights for the development of the region, summarised in Table 1.

According to research participants, the most desirable scenario (Gas and general industrial expansion) was also seen as the least likely. This scenario comprised rapid investment in gas at the same time as growing economic diversity.

Participants regarded this scenario as least likely because there would need to be a significant change in local distribution networks allowing local businesses greater access to local gas.

Economic modelling based on this scenario identified the highest positive economic outcomes in terms of contribution to gross regional product and employment (an additional 497 jobs over 10 years based on conservative economic growth assumptions).

The second most desirable scenario identified by research participants (Diversified energy mix) was also seen as the second most likely, involving slow investment in gas at the same time as growing economic diversity. Economic modelling of this scenario identified the second highest contribution to the economy and job creation.

The third most desirable scenario (Gas supply chain expansion) involved fast investment in gas at the same time as decreasing economic diversity. Though this scenario was seen as undesirable by participants, it was also seen as the most likely scenario.

Finally, the least desirable scenario (Business as usual) involved slow investment in gas and economic headwinds, leading to a relatively stagnant economy.

**Table 1. Summary of scenario desirability, perceived likelihood and economic outcomes over 10 years.**

Scenario	Desirability	Perceived likelihood	GRP*, 10 years (\$m)	Employment FTE, 10 years
1 Diversified energy mix	2nd	2nd	132	429
2 Gas and general industrial expansion	1st (highest)	4th (lowest)	150	497
3 Gas supply chain expansion	3rd	1st (highest)	35	32
4 Business as usual	4th (lowest)	3rd	24	-13

\*Modelled addition to Gross Regional Product (GRP) in millions of dollars. Desirability and perceived likelihood based on stakeholder preferences.





Grazing land near Penola.

## Pathways to the future Constraints on local supply

Research results show that investing in gas alone, without building diversification of the broader economy, would lead to only marginal benefits over business as usual.

A key reason why Scenario 2 was the most desirable was that some manufacturing industries are highly reliant on gas.

Currently the high domestic price for gas is placing strain on these industries which, due to the nature of their operations, cannot readily switch to another energy source.

Not all industries are reliant on gas and this underlies the relative appeal of Scenario 1 (Diversified energy mix). Seen as both likely and desirable, the modelling for this scenario indicates relatively high contributions to the economy and employment.

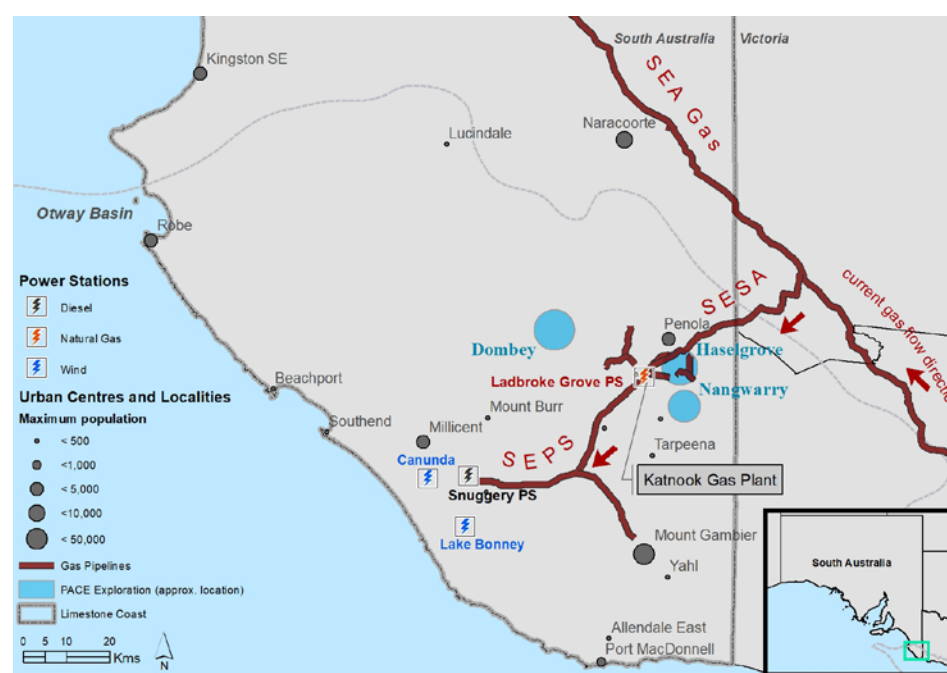
Considering the two most desirable scenarios together, the research reinforces the importance of economic diversity in general.

The stakeholder responses to the scenario 2 (Gas and general industrial expansion) reflect additional factors at play in the region.

While there has previously been a local gas industry, and there is clear demand for locally extracted gas to supply local businesses, major logistical constraints exist which prevent local use of locally produced gas.

In particular, local gas distribution pipeline infrastructure is a major limitation to providing locally extracted gas to a broad range of local industries.

The State Government had provided incentives for local exploration and policies to encourage local delivery of gas, however it was not logistically feasible for locally extracted gas to be supplied to local users at the time of conducting this research.



Gas transport pipeline and regional energy infrastructure in the Limestone Coast region of south east South Australia.



## Conclusions

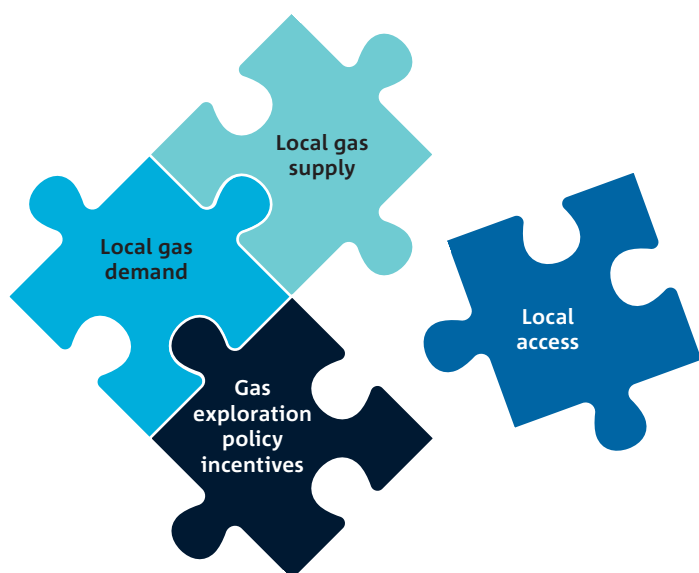
This research shows that having local manufacturing in close proximity to local gas supply has high potential economic and employment benefits.

However, these potential benefits are less likely to be achieved if infrastructure is designed to transport gas away from the region to urban and export markets.

The potential advantage of cheaper local gas may not be realised without changes to gas distribution systems.

To bring about the most desirable scenario, the research developed policy options, including:

- provision of incentives for new gas distribution infrastructure, and
- development of policies to increase competition within existing pipeline infrastructure in the south east region of South Australia.



Although there is incentive for exploration, local gas supply, and strong demand for local gas, a lack of local gas distribution infrastructure may prevent increased use of local gas.

## MORE INFORMATION

Find out more about the [project](#)

Read about [CSIRO's Gas Industry Social and Environmental Research Alliance \(GISERA\)](#)



### 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](http://gisera.csiro.au) for more information about GISERA's governance structure, projects and research findings.

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