

# Community wellbeing and local attitudes to conventional gas development in the South-East of South Australia

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# Contents

Acknowledgments.....	vi
Executive summary .....	vii

<b>Part I Introduction and Methods</b>	<b>1</b>
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1	Concepts used in this report .....	2
1.1	Community wellbeing .....	2
1.2	Attitudes and perceptions of conventional gas development.....	5
2	Context: Conventional gas in the south-east of South Australia .....	7
3	Method .....	9
3.1	Survey Overview .....	9
3.2	Survey Procedure .....	9
3.3	Survey sample and representativeness.....	10
3.4	Measures .....	11
3.5	Statistical analyses .....	12

<b>Part 2 Results and Conclusions</b>	<b>14</b>
---------------------------------------	-----------

4	Community Wellbeing .....	15
4.1	Overall community wellbeing and place attachment.....	15
4.2	Dimensions of Community Wellbeing .....	17
4.3	Most important dimensions of community wellbeing .....	20
5	Expected future community wellbeing .....	22
5.1	Reasons underpinning expectations of future community wellbeing .....	22
6	Attitudes and perceptions of conventional gas development.....	25
6.1	Attitudes towards conventional gas development.....	25
6.2	Feelings towards conventional gas development .....	28
6.3	Adapting to conventional gas development .....	29
6.4	Perceptions about conventional gas development and the sector .....	30
6.5	Model of social acceptance: A framework for explaining trust and social acceptance of conventional gas development .....	35
7	Deeper dive into the underlying drivers of social acceptance.....	38
7.1	Possible industry effects: Concerns and benefits.....	38

7.2	Industry and community relationship: Trust in industry, relationship quality, and procedural fairness .....	43
7.3	Governance: Trust in government, regulations, engaging and working with the community .....	44
7.4	Distributional fairness: Sharing costs and benefits .....	45
7.5	Knowledge and information.....	46
8	Demographic differences .....	50
9	Conclusions and implications .....	52
9.1	Community wellbeing .....	52
9.2	Attitudes and perceptions of conventional gas development in the SE of South Australia .....	53
Appendix A	Background information provided for survey questions relating to conventional gas development.....	57
Appendix B	Measures and reliability of scales .....	58
Appendix C	Statistical analyses .....	61
Appendix D	All survey items by Subregion .....	62
Appendix E	Tables of Demographic Differences .....	69
References	.....	76

# Figures

Figure 1 Mean scores of overall community wellbeing, expected future wellbeing, and place attachment: By subregions, 2019 .....	viii
Figure 2 Community wellbeing dimensions: By subregions, 2019 .....	ix
Figure 3 Attitudes towards conventional gas development in the lower SE of South Australia ...	xi
Figure 4 Perceptions of community responses to conventional gas development in the lower SE of SA .....	xii
Figure 5 Perceptions about conventional gas development: Underlying drivers for the lower SE region .....	xiv
Figure 6 Model of social acceptance .....	xv
Figure 7 Dimensions of community wellbeing grouped into six domains .....	3
Figure 8 A statistical model explaining social acceptance, or lack thereof, for onshore conventional gas development .....	6
Figure 9 Map of the lower South East region of South Australia, including LGA boundaries and energy infrastructure .....	7
Figure 10 Outline of survey question topics.....	10
Figure 11 Mean scores of overall community wellbeing and place attachment: By subregions, 2019.....	15
Figure 12 Overall community wellbeing items: By subregions, 2019 .....	16
Figure 13 Mean scores of overall community wellbeing and place attachment: By farm owners, 2019 .....	16
Figure 14 Community wellbeing dimensions: By subregions, 2019.....	18
Figure 15 Community wellbeing dimensions: By farm owners, 2019.....	19
Figure 16 Relative importance of each dimension to a sense of community wellbeing: By subregions, 2019.....	21
Figure 17 Expected future community wellbeing: By subregions, 2019.....	22
Figure 18 Attitudes towards conventional gas development in the lower SE of South Australia .....	25
Figure 19 Attitudes towards conventional gas development in the lower SE of South Australia: By subregion, 2019 .....	26
Figure 20 Attitudes towards conventional gas development in the lower SE of South Australia: By farm ownership, 2019.....	26
Figure 21 Attitudes towards conventional gas development in the lower SE of South Australia: By gender, 2019.....	27
Figure 22 Attitudes towards conventional gas development in the lower SE of South Australia: By income, 2019 .....	27

Figure 23 Acceptance of conventional gas development in the lower SE of SA: Self vs perceptions of others.....	28
Figure 24 Feelings towards conventional gas development in the lower SE of SA: By subregion, 2019 .....	29
Figure 25 Feelings associated with each attitude toward conventional gas development in the lower SE of SA.....	29
Figure 26 Perceptions of community responses to conventional gas development in the lower SE of SA .....	30
Figure 27 Perceptions about conventional gas development in the lower SE of SA: Underlying drivers by subregion .....	34
Figure 28 CSIRO model of social acceptance .....	35
Figure 29 Model of social acceptance: Mount Gambier and surrounds .....	37
Figure 30 Model of social acceptance: Penola and surrounds and Millicent and surrounds combined .....	37
Figure 31 Perceived impacts about conventional gas development in the lower SE of SA: By subregion, 2019 .....	39
Figure 32 Perceptions of risk from conventional gas development in the lower SE of SA: By subregion, 2019 .....	40
Figure 33 Percentage of residents feeling they would be personally impacted by conventional gas development in the lower SE of SA .....	41
Figure 34 Perceived benefits from conventional gas development in the lower SE of SA: By subregion, 2019 .....	42
Figure 35 Perceptions of trust in industry, relationship quality, and procedural fairness in the lower SE of SA: By subregion, 2019.....	43
Figure 36 Perceptions of formal governance, informal governance, and trust in government: By subregion, 2019 .....	44
Figure 37 Perceptions of distributional fairness in the lower SE of SA: By subregions, 2019 .....	45
Figure 38 Knowledge confidence and awareness levels about conventional gas in the lower SE of SA: By subregion, 2019.....	46
Figure 39 Perceptions of information need and sources in the lower SE of SA.....	47
Figure 40 Knowledge confidence and awareness of conventional gas development in the lower SE of SA: By overall attitude to conventional gas development.....	48

# Tables

Table 1 Descriptions of the fifteen dimensions of community wellbeing .....	3
Table 2 Profile of sample.....	11
Table 3 Summary of survey questions.....	12
Table 4 Reasons for expecting future community wellbeing to decline.....	23
Table 5 Reasons for expecting future community wellbeing to improve .....	23
Table 6 Reasons for expecting community wellbeing to stay the same .....	24
Table 7 Summarising the underlying drivers and perception scores for the lower SE region .....	32
Table 8 Measures and reliability of scales used in survey .....	58



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We also wish to acknowledge the 533 South Australian residents from the lower SE region who participated in the CSIRO survey of community wellbeing and local attitudes to conventional gas development in the South-East of South Australia.

# Executive summary

This research establishes baseline data for community wellbeing and local attitudes and perceptions of conventional gas development in the southern Limestone Coast or lower South-East region of South Australia. The research provides empirical data, which can be used to inform planning and decision making. It also delivers a framework for understanding and addressing community concerns and expectations about conventional gas development and the sector.

## What we did and when

Using a comprehensive survey instrument, we conducted telephone interviews of 533 residents of the lower South East (SE) region of South Australia and measured their perceptions of community wellbeing along 15 different wellbeing dimensions. We also measured local attitudes and feelings towards conventional gas development in the lower SE and the perceptions that underpin these attitudes. The survey comprised approximately 170 questions and took 35 minutes to complete on average. The response rate was 24%, which is relatively high for lengthy telephone surveys. The surveys were conducted over a four-week period in Sept-Oct 2019.

## Who participated

The sample comprised residents from the Wattle Range, Mount Gambier, and Grant Local Government Areas (LGAs) and grouped into three subregions centred on three main towns: Mt Gambier and surrounds, Penola and surrounds, and Millicent and surrounds. These subregions were used in reporting results. Participants were randomly selected using databases of landline and mobile telephone numbers. Age, gender and subregion quotas were used to ensure a representative sample was obtained in combination with weighting the data to achieve LGA, subregion, age, gender, and working status representativeness according to 2016 census data (ABS, 2016).

### *Note: Interpreting the results*

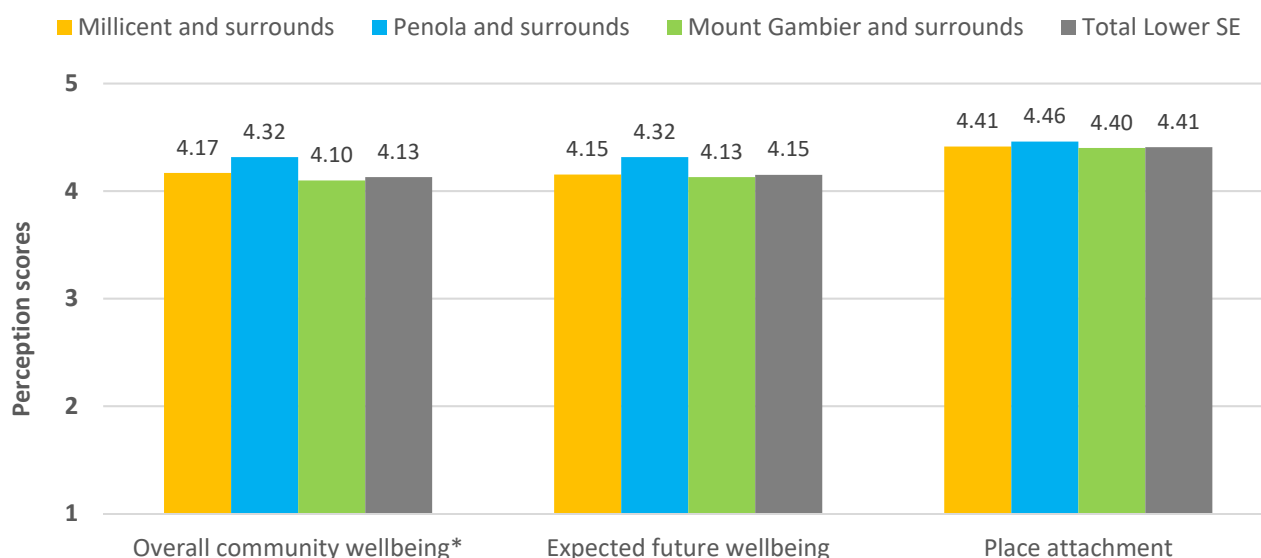
The results are reported as average scores out of 5 using a scale from 1 to 5, where 1 is the least and 5 is the most. A score below the midpoint of 3 is considered lower or unfavourable on average except for perceived impacts where the higher the score the greater the concern about potential impacts. Where relevant, we describe results as statistically different (higher or lower) using the science convention of statistical significance at the  $p < .05$  level. This means that any differences reported as statistically significant had less than a five percent chance that the findings were due to chance. While some differences may be evident in the graphs, unless they are described as significantly different they should be read as essentially similar.

## COMMUNITY WELLBEING

Community wellbeing scores reflect perceptions about whether the community is a great place to live and whether it offers a great quality of life for all ages. As such, it differs from individual wellbeing. Fifteen dimensions of community wellbeing were evaluated using approximately 70 questions. These covered social, environmental, political, economic, health, and physical infrastructure aspects of the community, including services, facilities, and the built environment. When assessing community wellbeing and future community wellbeing there was no reference to conventional gas development in the survey questions.

Results showed that community wellbeing overall in the lower SE region was very robust, with high scores evident in all subregions. Figure 1 shows that these very favourable views extended to expectations about the community's future wellbeing in three years hence. Residents also indicated a very high sense of belonging and pride in their communities as reflected in the place attachment scores across the region.

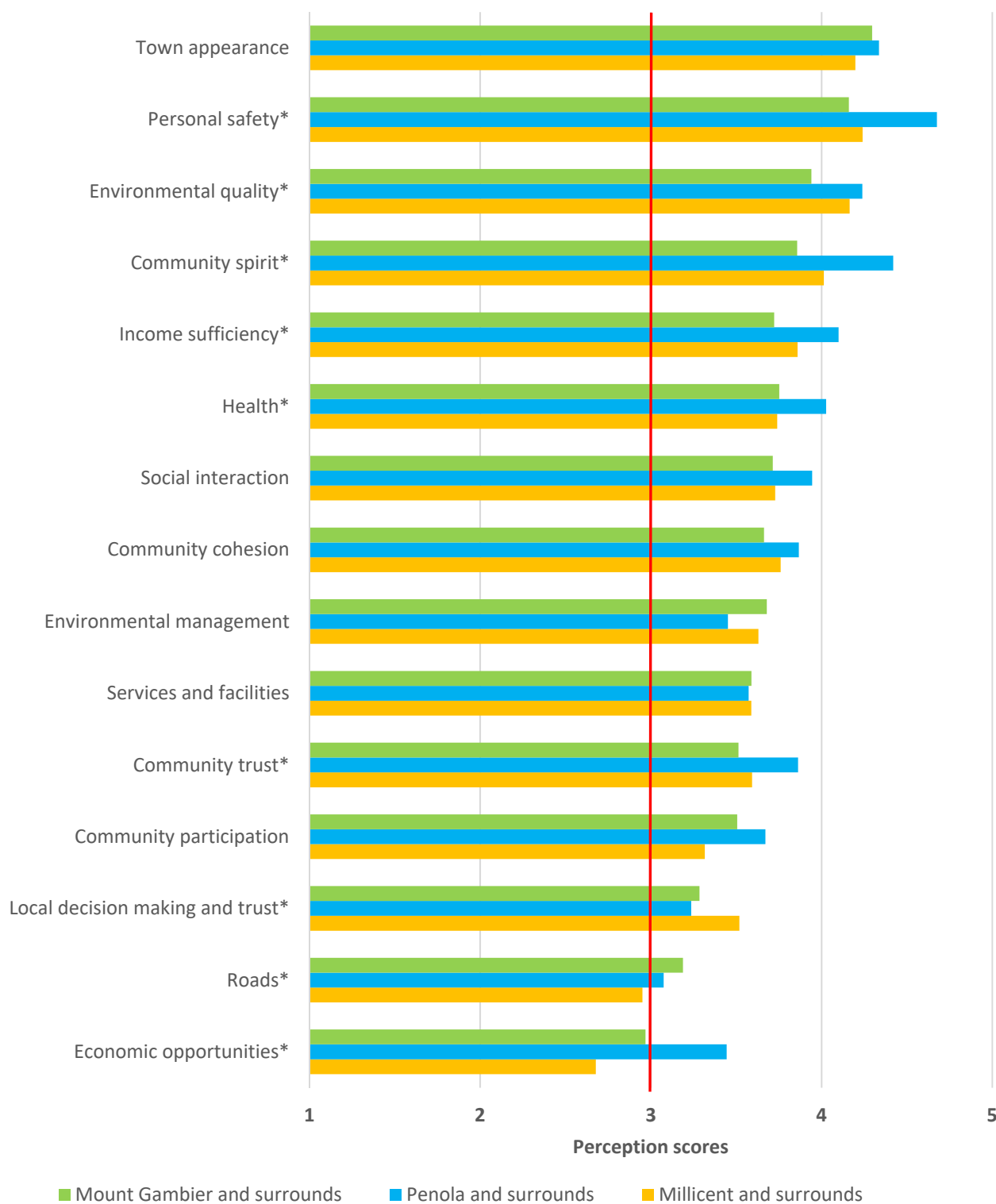
Figure 1 Mean scores of overall community wellbeing, expected future wellbeing, and place attachment: By subregions, 2019



Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions;

Analyses of the fifteen dimensions comprising community wellbeing showed that residents of Penola and surrounds had statistically more favourable views of their communities across a range of dimensions than residents of Mt Gambier and surrounds, and Millicent and surrounds, as shown in Figure 2. Particularly, Penola residents were far more positive about their economic opportunities than Mt Gambier and Millicent.

Figure 2 Community wellbeing dimensions: By subregions, 2019



Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions;

\* statistical difference in mean scores between subregions

Differences also were evident between farm owners and non-farm owners. Farm owners reported significantly higher levels on six of the fifteen dimensions including economic opportunities. Farm owners viewed their economic opportunities quite favourably, whereas non-farm owners viewed economic opportunities unfavourably. Farm owners also showed statistically higher levels of both community wellbeing and place attachment than people who did not own farms, though in all cases levels of community wellbeing and place attachment were very high.

Interestingly, differences in overall community wellbeing did not emerge between those who live in town and those who live out-of-town. Some differences in the underlying dimensions were evident but these did not extend into differences in place attachment or expected future wellbeing. It appears that owning a farm rather than living in or out-of-town is associated with increased perceptions of community wellbeing.

The most important dimensions of community wellbeing were services and facilities, the quality of the environment, perceptions of personal safety, income sufficiency, and perceptions of community trust. These can be considered as the dimensions that contribute most to a sense of wellbeing in the community. Understanding the relative importance of a dimension helps decision makers to prioritise scarce resources for improving or maintaining community wellbeing. In combination, the perceived level of a dimension and its relative importance can provide empirical evidence for directing initiatives towards improving community wellbeing within the region.

Notably, there was considerable variation among the subregions suggesting that initiatives for improving or maintaining wellbeing within each of the subregions needs to be very place-based and respond to the aspects of community life that each subregion views as important. The research identifies which dimensions are most important for each subregion.

## Key messages: Community wellbeing

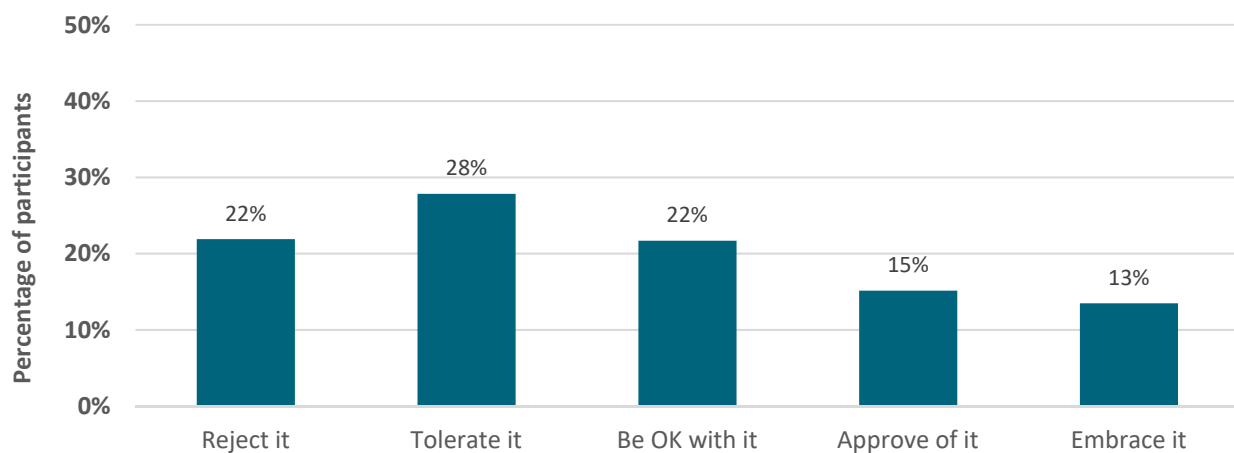
1. Community wellbeing was very high across the lower SE region, particularly in Penola and surrounds where economic opportunities were viewed considerably more favourably than the other subregions.
2. Even though there were no statistical differences between people who live in town and those who live out-of-town, those who *own a farm* indicated statistically higher levels of community wellbeing and place attachment. Farm owners also felt there was greater economic opportunities within their communities than those who don't own a farm.
3. The main drivers of community wellbeing across the region were services and facilities, the quality of the environment, perceptions of personal safety, income sufficiency, and perceptions of community trust. However, there was considerable variation among the subregions.
4. All subregions showed very positive expectations that community wellbeing in three years hence would be high.

## ATTITUDES AND PERCEPTIONS OF CONVENTIONAL GAS DEVELOPMENT

Attitudes towards conventional gas development in the SE of South Australia ranged across a spectrum of views

- 22% of people rejected conventional gas development
- 13% of people embraced conventional gas development
- 65% of people tolerated, would be OK with it, or approved of conventional gas development
  - 28% would tolerate it
  - 22% would be OK with it
  - 15% would approve it

Figure 3 Attitudes towards conventional gas development in the lower SE of South Australia

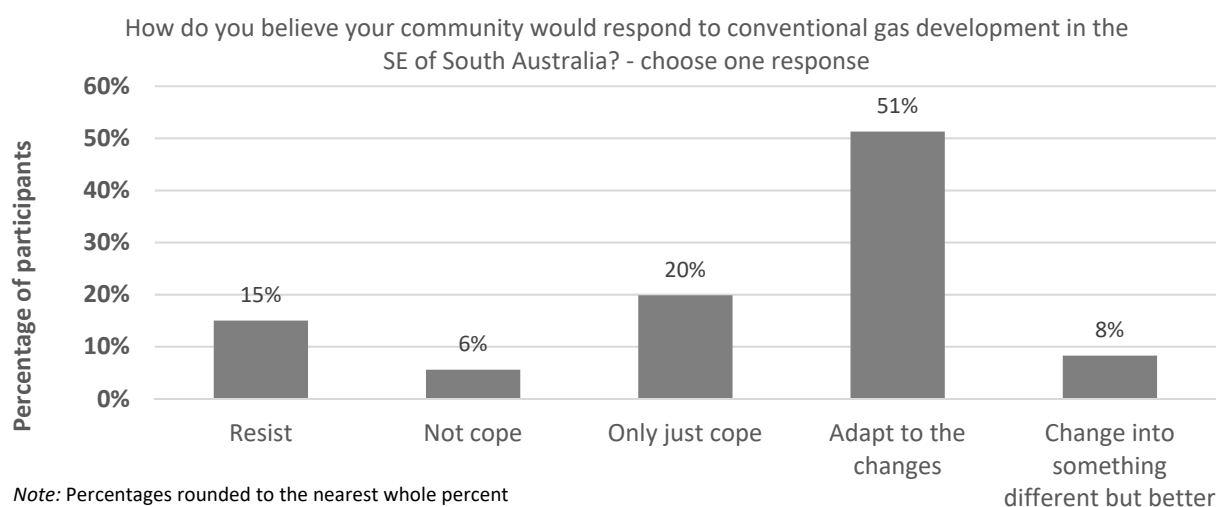


Note: Percentages rounded to the nearest whole

We also measured people's feelings towards onshore conventional gas development for each of the attitude categories: people who reject the idea had very negative feelings ( $M = 1.74$ ), people who tolerate had more neutral feelings around the mid-point of three ( $M = 2.88$ ), people who were ok with it had more positive feelings ( $M = 3.37$ ), as did those who approve of ( $M = 3.97$ ) and embrace it ( $M = 4.59$ ).

Most people believed that their community would adapt to the changes associated with conventional gas development (51% of residents) or transform into something different but better (8% of residents). Figure 4 also shows that just over 40% of residents believed that their community would resist the changes (15% of residents), not cope (6% of residents) or only just cope with the changes (20% of residents). These responses did not differ significantly between subregions or whether residents owned farms or not.

Figure 4 Perceptions of community responses to conventional gas development in the lower SE of SA



Previous research and interviews with stakeholders identified a range of issues that underpin people's overall attitudes and feelings towards conventional gas development. The survey asked 74 questions about these issues, which were grouped together into eight key underlying drivers.

#### The underlying drivers include:

- **Perceived impacts:** immediate issues, possible future issues, risk manageability and severity
- **Perceived benefits:** local benefits, regional and societal benefits
- **Distributional fairness:** perceptions of how fairly impacts and benefits are shared
- **Trust in the onshore gas industry**
- **Relationship quality:** perceptions of the relationship between the gas industry and community
- **Procedural fairness:** perceptions of how fairly the gas industry will treat the community
- **Governance:** perceptions of formal governance (regulations and compliance), government engaging with and working collaboratively with communities, and trust in state departments
- **Knowledge:** awareness and understanding of the onshore conventional gas industry

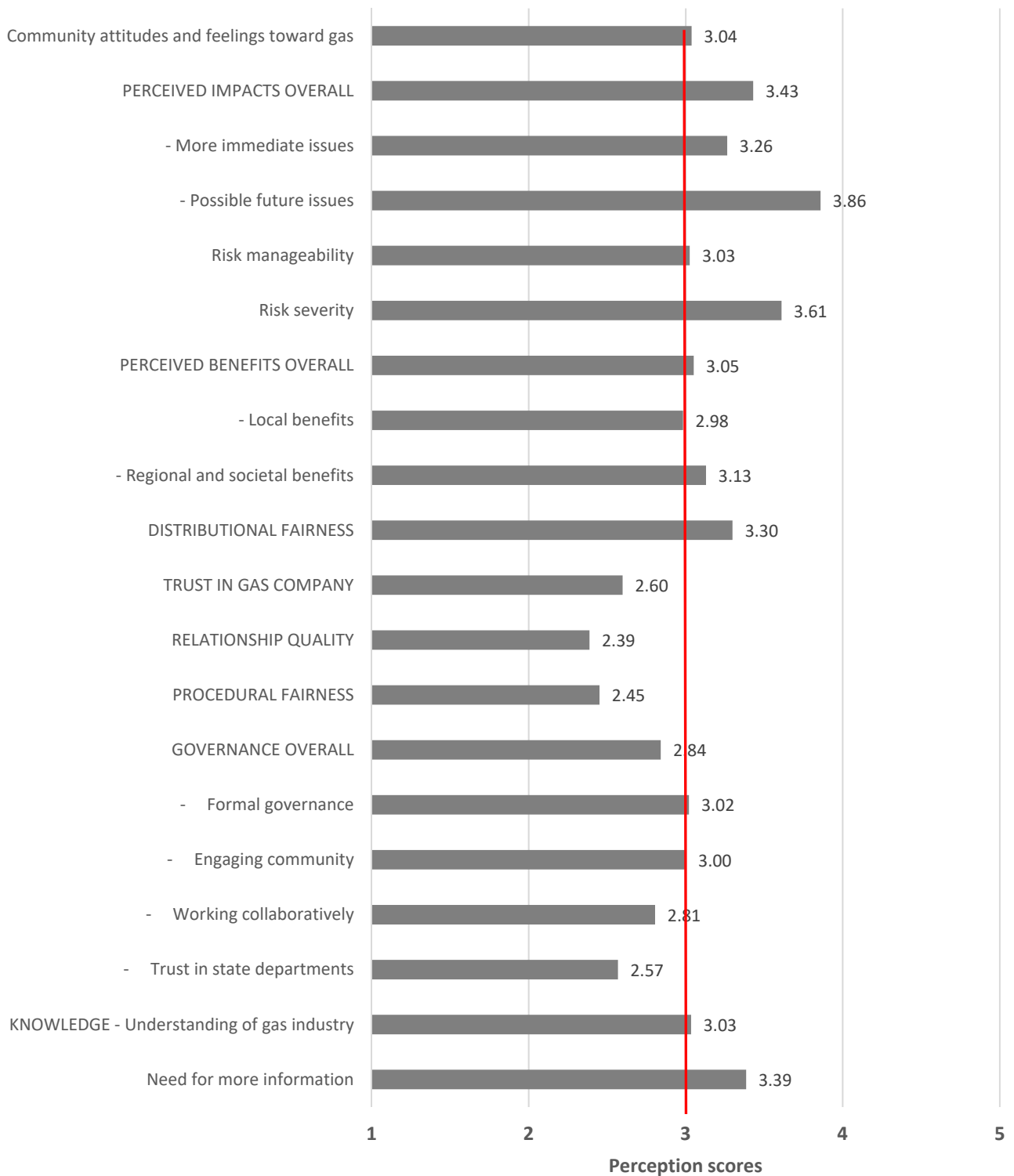
## Perceptions of the underlying drivers

We measured each of these eight key underlying drivers and sub-components, and Figure 5 shows the scores for the lower SE region. It also includes additional scores about risk perceptions and information needs.

- Concerns about impacts overall were moderate ( $M = 3.43$ ), but possible future issues, such as introducing fracking in the future were significantly more concerning to residents than the more immediate impacts such as impacts from dust, noise and light. Perceptions that risks from gas development could be managed were marginal ( $M = 3.03$ ), whereas the severity of risks from gas development were viewed as moderately high ( $M = 3.61$ ).
- Benefits were perceived to be very modest ( $M = 3.05$ ) with residents neither agreeing nor disagreeing that there would be benefits on average. Residents did not identify local benefits as very significant and viewed wider regional and societal benefits that onshore gas development would bring as more favourable.
- Distributional fairness scores were moderate ( $M = 3.30$ ) indicating that people thought it fair on average provided the farmer and the community was compensated accordingly by some way of benefit.
- Trust in gas companies was limited ( $M = 2.60$ ) and views about how the gas company would treat locals (relationship quality and procedural fairness) were also unfavourable and likely driving this low level of trust.
- Perceptions of governance overall was also viewed as limited ( $M = 2.84$ ), though people had more confidence in governments ability to regulate and engage with communities than they had for working collaboratively with government and trust in governing bodies.
- Knowledge levels about conventional gas development and an understanding of the differences between conventional and unconventional gas was modest ( $M = 3.03$ ) with people indicating a need for more information ( $M = 3.39$ ).



**Figure 5 Perceptions about conventional gas development: Underlying drivers for the lower SE region**



*Note:* Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions except perceived impacts where the higher the score the greater the concern; \* statistical difference in mean scores between subregions

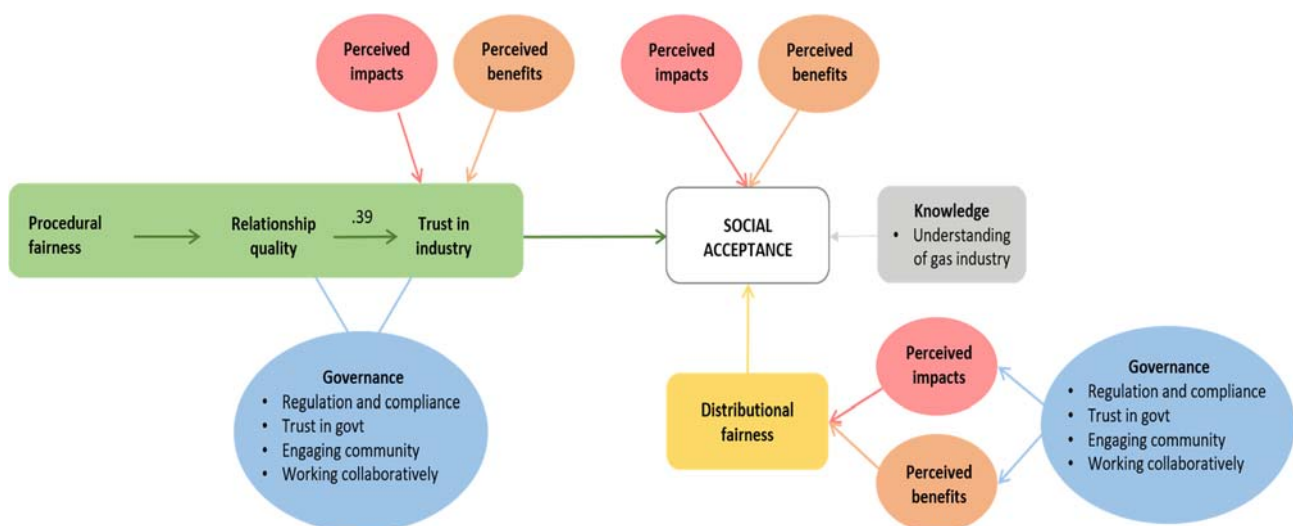
## Model of social acceptance: A framework for understanding community concerns and expectations of conventional gas development

Statistical modelling of the eight key factors contributing to trust and social acceptance showed how the different factors work together to shape people's overall attitude or level of acceptance towards conventional gas development. It also showed the factors important to trust and a sense of distributional fairness, as shown in Figure 6.

The model demonstrates that people's trust and acceptance of the industry is dependent on a range of factors. Moreover, each factor needs to be addressed and improved if people's trust in industry and acceptance of conventional gas development in their communities is to improve.

The statistics attached to the model (not shown here) identify which factors are more important than others. These are described and discussed in the report and summarised in the key messages.

Figure 6 Model of social acceptance



## Key messages: Attitudes and perceptions of conventional gas development

1. Across the lower SE region, residents demonstrated a range of views towards conventional gas development with most people indicating they would tolerate or be OK with conventional gas development in the region
  - Perceptions differed among the subregions with Penola residents tending to be more polarised than Mt Gambier and Millicent in their views. This means that fewer people in Penola held a middle-ground view about conventional gas development.

- Farmers were similar to Penola in that they showed a tendency for a more polarised spread of views with fewer people being in the middle of the distribution
2. Attitudes and perceptions differed based on gender and income. These characteristics need to be factored into communication and engagement planning as each demographic segment has different concerns and needs for information.
    - Women showed higher levels of concern about the impacts and lower levels of trust and acceptance. They also indicated lower confidence in their knowledge.
    - Residents with high household incomes (over 120,000 per annum) had more favourable attitudes and feelings toward conventional gas development.
  3. Knowledge and understanding of the industry were not direct drivers of trust and acceptance, though they helped shape perceptions of impacts, depending on perceptions of risk manageability, which in turn influenced acceptance.
    - Additional industry knowledge was associated with lower perceived impacts, but only when any risks were perceived as manageable.
    - People do not believe on average that the risks associated with conventional gas development are at this stage manageable.
    - Those with more strongly held attitudes about conventional gas development (either rejecting or embracing it) were both more confident about their knowledge and awareness of the industry than those who held more moderate views.
  4. People were more concerned about the long-term future issues of conventional gas development than they were about the immediate impacts. The issues of highest concern to participants were fracking being introduced after the moratorium and unconventional gas development being introduced over time, both of higher concern than impacts to water.
  5. Local communities did not perceive the benefits of conventional gas development to be very high. This applied to both local benefits and wider benefits that the industry may bring to the region or to society. Even so, people believed the benefits that conventional gas development would deliver would be greater for the wider region and society than for the local community.
    - Perceptions of benefits were important drivers of acceptance for people who lived in Penola and Millicent subregions, but not so for Mt Gambier
  6. Good governance was key to shaping trust in the conventional gas industry and a sense of fairness that benefits and impacts would be fairly distributed.
  7. Distributional fairness was important to acceptance, which in turn was driven by perceived benefits and impacts; benefits being larger drivers of fairness than impacts.
    - This means when people weigh up the pros and cons to decide how fair it is to have conventional gas development in the region, benefits are key to this evaluation.

# Part I Introduction and Methods

## Background to the research

This research is part of a suite of social, economic and environmental research being conducted by CSIRO's GISERA into potential impacts of onshore conventional gas development in the Otway Basin of South Australia. It establishes baseline estimates of community wellbeing and attitudes toward conventional gas development in the southern Limestone Coast or lower South-East region of South Australia for informing planning and decision making, and for monitoring over time. It does not investigate attitudes about unconventional gas development in the Basin nor hydraulic fracturing as there is a moratorium on this form of onshore gas development in the region until November 2028.

## Project aims

This project aims to determine baselines for understanding community concerns, expected benefits, knowledge of, and factors important for building trust and acceptance in relation to conventional gas development in the South East of South Australia (SA). The research uses the context of the resumption of the region's conventional gas industry whereby 2 to 3 wells are developed in the South East over the next couple of years (Hasselgrove-3, Dombey-1, and Nangwarry-1), and possibly a dozen wells over the next decade, providing regional gas supplies and diversification to the state's energy and power supply sources. In addition, the research assesses baseline levels of community wellbeing, expectations of the region's future and identifies community values and beliefs in relation to conventional gas development. Establishing baseline measures is important for monitoring community wellbeing and attitudes to conventional gas development in the South East region over time.

# 1 Concepts used in this report

## 1.1 Community wellbeing

A measure of community wellbeing is a snapshot in time of the perceived 'quality of life' within the community; an evaluation of the community as a 'good place to live' (McCrea, Walton, & Leonard, 2014). The notion of community wellbeing means different things to different people, and thus a comprehensive measure of wellbeing that incorporates different '**dimensions**' of wellbeing is used to gain a deeper understanding of the various aspects of community wellbeing.

Drawing on international research and previous Australian research in onshore gas development regions in the Western Downs region of Queensland and the Narrabri region of New South Wales (McCrea, Walton, & Leonard, 2014; McCrea, Walton, and Leonard, 2019; Walton and McCrea, 2017; Walton and McCrea, 2018), we investigated wellbeing across 15 dimensions. These dimensions can be grouped into six domains: social, environmental, political, physical infrastructure and services, economic, and health (McCrea et al., 2014). Figure 7 depicts the 15 dimensions grouped into the six domains and

Table 1 gives a brief description of each dimension, which we measure and discuss further in this report.

Figure 7 Dimensions of community wellbeing grouped into six domains



Table 1 Descriptions of the fifteen dimensions of community wellbeing

Dimension	Domain	Brief description
1. Personal safety	Social	Safety at home alone at night, walking outside alone at night
2. Community spirit	Social	Friendliness, supporting each other
3. Community cohesion	Social	Inclusion, welcoming of newcomers and people with differences
4. Community trust	Social	Trust within the community and people seen around locally
5. Community participation	Social	Supporting community based organisations and activities
6. Social interaction	Social	Visiting, talking, and going out with others in the community
7. Environmental quality	Environment	Quality of the environment in which people live - levels of dust and noise, overall quality of the general environment
8. Environmental management	Environment	Managing the environment for the future: underground water, nature reserves, parks and caves
9. Local decision making	Political	Citizens having a say and being heard in local decision making
10. Trust in local leaders	Political	Local leaders and local council can be trusted

<b>11. Services and facilities</b>	Physical infrastructure	Schools, childcare, sports and leisure facilities, shopping, medical and health services, and community support services
<b>12. Town appearance</b>	Physical infrastructure	General physical appearance of the town, cleanliness, parks, gardens
<b>13. Roads</b>	Physical infrastructure	Condition, safety, and amount of traffic on the roads
<b>14. Income sufficiency</b>	Economic	Household income sufficient for household expenses, and lifestyles
<b>15. Economic opportunities</b>	Economic	Job opportunities in the community, local businesses doing well
<b>16. Health</b>	Health	Diet and eating habits, exercise habits, physical and mental health

## 1.2 Attitudes and perceptions of conventional gas development

Community acceptance of an industry's activities within a community is important for the establishment and ongoing operation of a new industry. This acceptance is commonly referred to as a 'Social Licence to Operate' (SLO), whereby the industry meets the ongoing expectations of the community with regards to its actions and thus gains ongoing acceptance (Curran, 2017; Gunningham, Kagan, & Thornton, 2004; Moffat & Zhang, 2014).

Building on other Australian studies (e.g., Askland et al., 2016; Grubert & Skinner, 2017; Zhang & Moffat, 2015), as well as CSIRO research in the Western Downs region of Queensland and the Narrabri region of New South Wales into unconventional gas development (Walton & McCrea, 2017; 2018), we identified and modified a range of factors that may also shape people's perceptions and attitudes about conventional gas development. As listed in Box 1, these factors represent the underlying drivers of trust and acceptance, or lack thereof. When people score these factors highly they are likely to have more positive views about onshore conventional gas development, and when they have low scores they are likely to have more negative views. The exception is when people have high levels of concern over possible negative impacts from gas development, they are likely to have more negative views of the industry and its development.

**Box 1 List of factors that underlie trust and acceptance of onshore gas development**

### **Perceived impacts**

- Concerns about immediate issues, possible future issues, risk manageability, risk severity

### **Perceived benefits**

- Local benefits, regional and societal benefits

### **Distributional fairness**

- Perceptions of how fairly impacts and benefits are shared

### **Trust in the onshore gas industry**

- Trust and confidence in industry competence, and doing the right thing by communities

### **Relationship quality**

- Perceptions of the quality of the relationship between industry and community

### **Procedural fairness**

- Perceptions of how well the industry will listen to, respect, inform the community

### **Governance**

- Perceptions of formal governance (regulations and compliance), government engaging with communities, working collaboratively with communities, trust in state departments

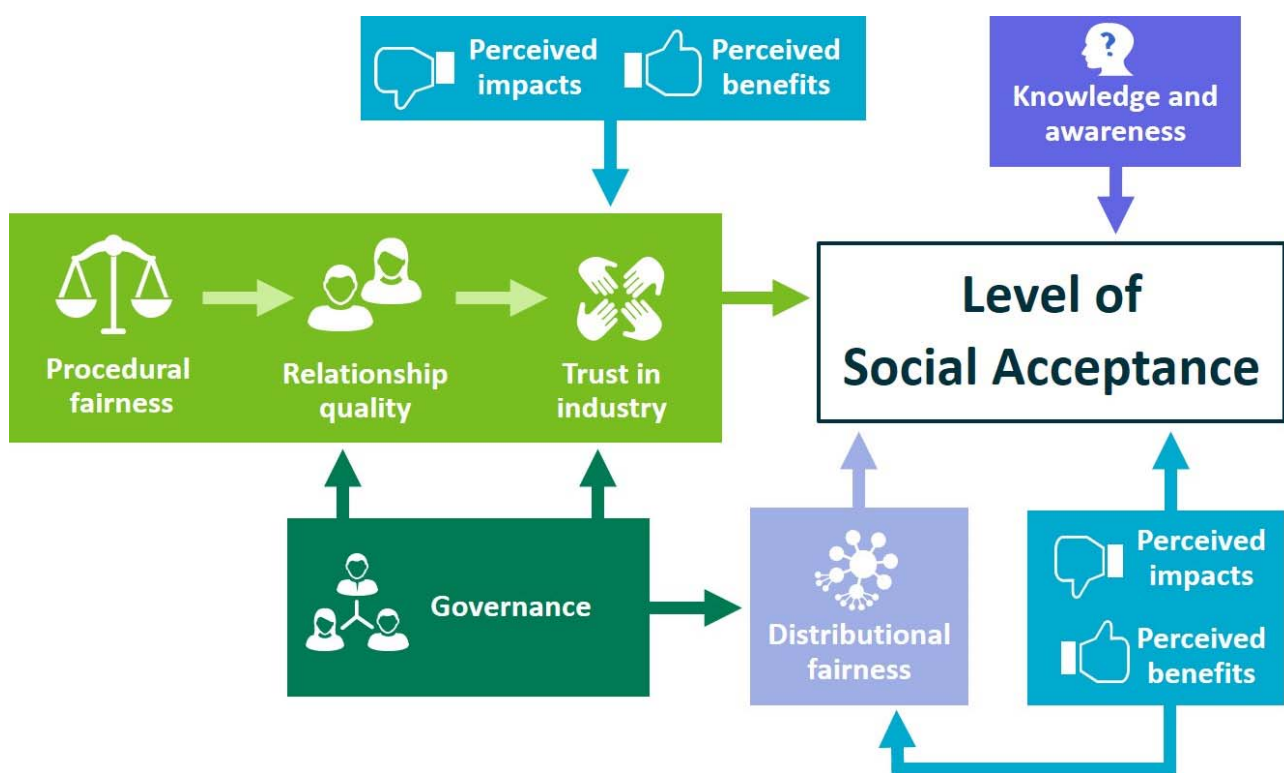
### **Knowledge**

- Awareness and understanding of the onshore conventional gas industry



Figure 8 shows a model of how these factors work together to explain a person's level of acceptance (or lack thereof) for onshore gas development within their community. Each of these factors are important to communities. For example, concerns that communities have about gas development, community expectations if trust in the industry is to be achieved, and views related to fairness, including how benefits are distributed and costs borne by host communities. By measuring these factors, we provide empirical evidence to key stakeholders as to the current levels of these factors within communities. Results can be used to guide industry improvements, government initiatives, and strengthening policy and standards governing the onshore conventional gas sector.

Figure 8 A statistical model explaining social acceptance, or lack thereof, for onshore conventional gas development

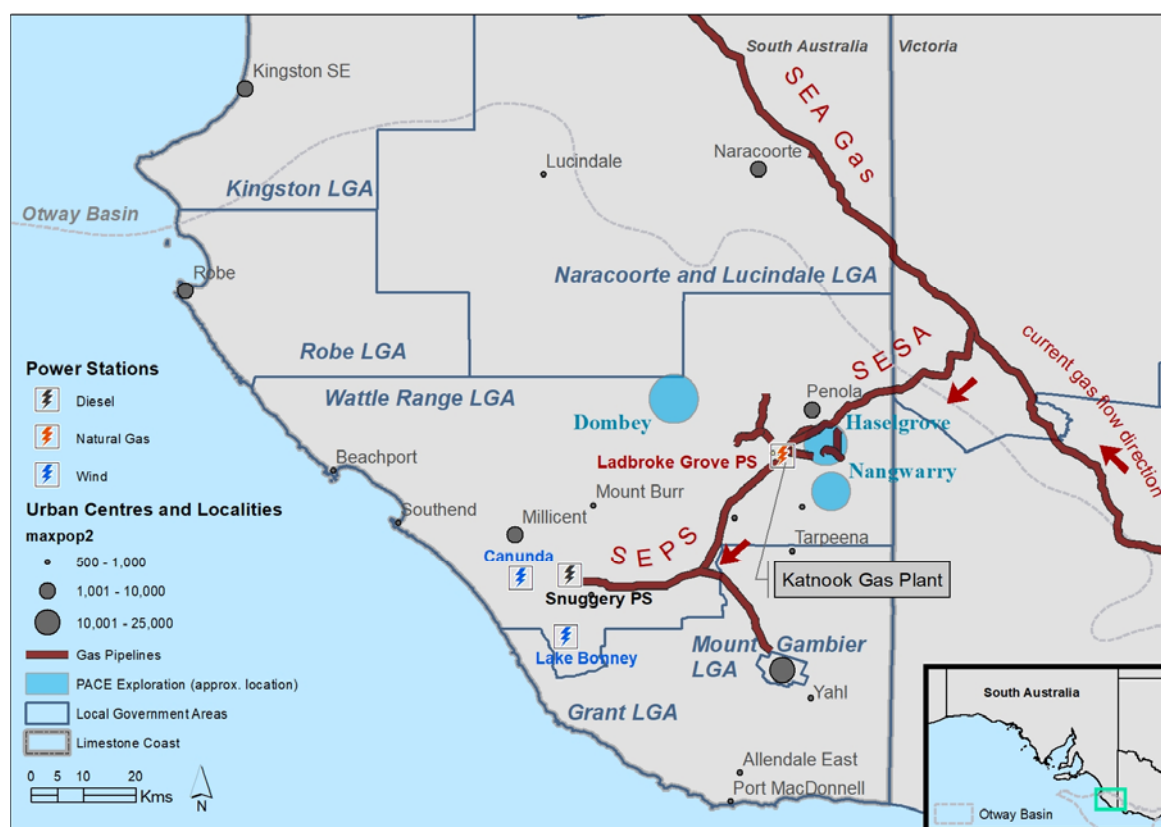


## 2 Context: Conventional gas in the south-east of South Australia

The south-east region of South Australia is bound by the South Australian coastline to the west and south, the Victorian border to the east, and stretches north to include the local governments areas of Kingstown and Tatiara. This area is often referred to as the Limestone Coast and is mostly rural, with primary industries the predominant land-use. It is a highly productive area, with significant forestry plantations and agricultural operations. The agricultural industry is particularly diverse; including livestock grazing, wool, cropping, dairying, viticulture and other horticulture (ABARES, 2019). The local economy is also supplemented by manufacturing industries such as timber, pulp and paper processing, and wine production.

This research focusses on the three most southern LGAs of the region, the City of Mount Gambier, the District Council of Grant, and the Wattle Range Council areas, as shown in Figure 9. Mount Gambier is the major urban centre of the South East region, with a population of approximately 26,000 (ABS, 2016). It is located close to the Victorian border and equidistant (approximately 430kms) to the state capitals of Adelaide and Melbourne. The District Council of Grant surrounds Mount Gambier and includes several small townships such as Yahl and Tarpeena. The main towns within the Wattle Range Council area, to the north, include Millicent (pop approx. 5000) and Penola (pop approx. 1300).

Figure 9 Map of the lower South East region of South Australia, including LGA boundaries and energy infrastructure



Adapted from <https://gisera.csiro.au/project/assessing-the-value-of-locally-produced-conventional-gas-in-sas-south-east/>

Figure 9 also shows a map of the gas pipelines and associated infrastructure in the South East region of South Australia (GISERA, 2019). Conventional gas extraction in the South East has co-existed with other land uses for over three decades. Exploration and production wells have been drilled in the Otway Basin since early last century, with the first deep exploration well in 1915 east of Robe (Robe 1). The first commercial discovery of carbon dioxide gas was made in 1967, south-east of Mount Gambier (Caroline 1), and the first commercial discovery of methane gas was made south-west of Penola in the Wattle Range LGA (Katnook 1) in 1987 (DEM, 2019a). Between 1991 and 2011, approximately 70 billion cubic feet of conventional gas was extracted from South Australia's Otway Basin. Over the twenty-year period 1991 – 2011, conventional gas wells in the South East region provided gas locally to Mount Gambier, the surrounding districts and smaller towns, and several key manufacturing and processing businesses located in the region. Currently, local industrial demand for gas includes the Kimberly Clark Australia pulp and paper mill in Millicent and dairy processing near Penola, following the conversion of former potato processing plants into dairy processing facilities.

In 2013, the Katnook gas plant outside Penola was mothballed and the region accessed its gas outside the region from a central distribution network. This change in supply has coincided with other changes to the state's electricity and gas supply, such as a significant increase in power generation from wind energy. Residents and businesses of SA are paying relatively high rates for electricity and gas, with state and federal policy makers negotiating plans to provide cheaper, greener, and more reliable supply options. The SA government has also placed a 10-year moratorium on hydraulic fracturing (fracking) in the South East region until November 2028.

Resumption of conventional gas production in the region near Penola is part of improving energy security and the scope of planned activity is likely to be between 4-12 wells in the South East over the next decade. The Wattle Range LGA contains most of the conventional gas wells previously drilled in the South East, mostly south-east of Penola, with approximately 20 wells (DEM, 2019b). However, petroleum exploration licences presently extend across most of the southern half of the South East. This includes the LGAs of Wattle Range; Grant; Robe; the southern half of Naracoorte and Lucindale; and the southern tip of Kingston LGA. In January this year, Beach Energy announced the discovery of a potentially commercial gas field south of Penola (Haselgrove-3 ST1) (World Oil, 2018). Their decision to drill at this site was supported by a SA government grant under the PACE scheme (Plan for Accelerating Exploration) (Beach Energy, 2019), which assisted Beach Energy's plan to build a \$22.6 million gas processing plant to purify gas from Haselgrove-3 (The Advertiser, 2018). In addition, a joint venture between Rawson Oil and Gas Ltd and Vintage Energy Ltd have identified PEL 155 (Nangwarry) as a potential area for exploration and they are also recipients of a \$4.95 million PACE grant to develop the gas (Vintage Energy, 2017).

## 3 Method

### 3.1 Survey Overview

The survey was conducted during July-August 2019, using computer-assisted telephone interviewing (CATI). The survey explored community wellbeing and attitudes to conventional gas development in the south east region of South Australia, specifically targeting three local government areas in the region: Wattle Range, Mount Gambier and Grant. A third-party research company administered the survey using a database of landline and mobile telephone numbers to randomly select residents based on pre-determined selection criteria, and demographic quotas, which combined with data weighted were used to achieve a representative sample.

On average, the survey took 35 minutes to complete and was undertaken by 533 residents. The response rate was 24.3%, which is considered a good outcome for lengthy telephone surveys.

#### Inclusion criteria quotas

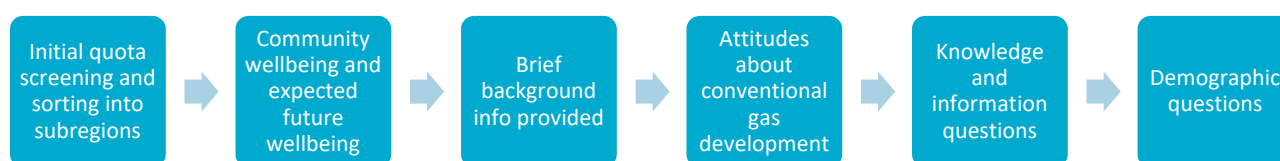
- Residents of Wattle Range, Mount Gambier or Grant LGAs
- Age of 18 years or older
- Demographic quotas based on age, gender and location characteristics according to the Australian Bureau of Statistics (ABS, 2016).

### 3.2 Survey Procedure

The survey comprised approximately 170 questions covering six main topics. Figure 10 shows the initial part of the survey included screening and demographic quota questions. Within the three targeted LGAs there were three main towns or areas of interest: Penola and surrounds, Millicent and surrounds, and Mount Gambier and surrounds. Participants were asked which of the three towns they felt most part of. This town and surrounds became the subsequent reference for community related questions for that participant. For example, if a participant identified Millicent and surrounds as their community then all subsequent questions were framed in relation to 'the town and surrounds of Millicent'. These three towns and surrounds make-up three 'subregions', which are used for reporting results. Residents also identified whether they lived in or out-of-town.

The survey proceeded with community wellbeing questions, followed by attitudes and perceptions about conventional gas development and the sector, then knowledge and information questions, and finally a few more demographic questions. Prior to the questions about their attitudes and perceptions of conventional gas development, residents were also given some brief background information relating to conventional gas development in the region, as shown in Appendix A .

Figure 10 Outline of survey question topics



At the end of the survey participants were asked whether they would like to be in a prize draw for some \$50 gift vouchers as a thank-you for completing the survey. Twenty participants were randomly selected to receive vouchers.

## ETHICS REVIEW

All procedures adhered to the National Statement on Ethical Conduct in Human Research, as well as the ethical review processes of the CSIRO, which granted ethics approval.

### 3.3 Survey sample and representativeness

The sample comprised 533 residents and were sampled from the Wattle Range, Mount Gambier and Grant LGAs in the southern Limestone Coast or lower South East region. Within that region, there were three main areas of interest:

- **Penola and surrounds** (108 residents from postcodes 5277, 5278, 5279 and 5263)
- **Millicent and surrounds** (188 residents from postcode 5280)
- **Mt Gambier and surrounds** (237 residents from postcodes 5290 and 5291)

Penola, Millicent and surrounds made up the Wattle Range LGA. Mount Gambier and surrounds includes the LGA of Mount Gambier, which approximates the city boundary, plus the LGA of Grant surrounding Mount Gambier, which is largely rural. See Figure 9.

Two of the three main areas of interest (Penola and surrounds and Millicent and surrounds) were in the Wattle Range LGA, so this LGA was over sampled compared to the Mount Gambier and Grant LGAs.

Those living out-of-town were also over sampled to ensure sufficient out-of-town residents and farmers were included in the research.

Residents who were over-sampled were later weighted to ensure the statistics were representative for each subregion and the lower SE region, as shown in Table 2.

## Representativeness

The sample was over-representative of older males and under-representative of younger adults. Thus, to gain representative survey estimates, the sample was weighted by age, gender, and whether respondents lived in- or out-of-town for each of the three main subregions. The data was

weighted using the *calibrate* program in Stata15 to achieve a close match to the ABS 2016 population census. The weighted sample was used in analyses of results.

Table 2 shows the sample profile across a range of geographic and demographic variables. It also shows the weighted sample compared to statistics from the 2016 population census using TableBuilder at [www.abs.gov.au](http://www.abs.gov.au).

**Table 2 Profile of sample**

	ORIGINAL SAMPLE (NO.)	ORIGINAL SAMPLE (%)	WEIGHTED SAMPLE (%)	2016 CENSUS (%)
<b>LGAs</b>				
- Wattle Range	296	55.5%	25.8%	25.3%
- Mount Gambier	170	31.8%	56.5%	56.9%
- Grant	67	12.6%	17.7%	17.8%
<b>Areas of interest</b>				
- Penola and surrounds	108	20.3%	9.4%	9.5%
- Millicent and surrounds	188	35.3%	16.4%	16.3%
- Mount Gambier and surrounds	237	44.5%	74.2%	74.2%
<b>In-town</b>	337	63.2%	76.8%	76.9%
<b>Out-of-town</b>	196	36.8%	23.2%	23.1%
<b>Male</b>	270	50.7%	50.1%	50.2%
<b>Female</b>	263	49.3%	49.9%	49.8%
<b>Aged 18-34</b>	61	11.4%	23.7%	23.7%
<b>Aged 35-54</b>	183	34.3%	34.1%	34.1%
<b>Aged 55+</b>	289	54.2%	42.2%	42.2%
<b>Working</b>	324	60.8%	62.2%	58.6%
<b>Not working</b>	209	39.2%	37.8%	41.4%

## 3.4 Measures

### 3.4.1 Response scales

Survey questions mainly used a response scale from 1 to 5 where 1 was the least and 5 was the most. Participants were either asked to indicate how much they agreed with a statement, or how satisfied they were with the issue in question. The agreement scales ranged from 1 = strongly disagree to 5 = strongly agree, and the satisfaction scales ranged from 1 = very dissatisfied to 5 = very satisfied. The demographic questions required participants to choose the most accurate category. There were three categoric questions where participants were required to choose one response. There were also two open ended question, which asked participants for a short response in their own words (to provide reasons for expected community wellbeing and information needs regarding conventional gas development).

### 3.4.2 Survey items

The survey comprised approximately 170 questions (items) covering five main topics. A brief outline of the items used to measure each topic area is summarised in Table 3. The wording of the items was informed by interviews with key local stakeholders to ensure the questions were tailored to reflect the SE region context. Descriptions of individual measures and scales are detailed in Appendix B along with reliability of each scale. The survey questions with exact wording of all items are detailed in Appendix D.

**Table 3 Summary of survey questions**

SURVEY TOPIC	BRIEF DESCRIPTION	
<b>1. Community wellbeing</b>	68 items	<i>Fifteen dimensions</i> of wellbeing each with their own set of multiple items (68 items) <i>Overall wellbeing</i> , five items rating the community as a suitable place to live for different segments of the population (children / teenagers / seniors), and assessing the community overall as a place to live (that offers a good quality of life / they are happy to be living in)
<b>2. Expected future community wellbeing</b>	4 items	<i>Expected future community wellbeing</i> in 3 years hence (as a place that offered a good quality of life / where they would be happy to be living). They were also asked to choose how wellbeing in their community might change in the future (decline / stay about the same / improve) and why.
<b>3. Attitudes and perceptions of conventional gas development and the sector</b>	77 items	<ul style="list-style-type: none"> <li>• Perceived impacts - immediate and future</li> <li>• Perceived risks - manageability and severity</li> <li>• Personal impact</li> <li>• Perceived benefits – local and wider (regional and societal)</li> <li>• Perceived fairness – procedural and distributional</li> <li>• Trust in gas companies</li> <li>• Quality of relationships and responsiveness of gas companies</li> <li>• Governance – formal (compliance, regulations); engaging community, working collaboratively; trust in gas governing bodies</li> <li>• Feelings towards conventional gas development, measuring positive emotions (pleased, optimistic) and negative emotions (angry, worried)</li> <li>• Attitudes towards conventional gas development – acceptance of conventional gas development in the region</li> <li>• Community adapting, perceptions of the community's coping and adapting to a proposed conventional gas development</li> </ul>
<b>4. Knowledge and information</b>	13 items	Use of different types of information sources; self-rated knowledge about the industry / gas extraction / impact on underground water; need for more information
<b>5. Demographic questions</b>	12 items	<ul style="list-style-type: none"> <li>• Including age, gender, employment status, household income, education, farm ownership and type, location type (live in or out-of-town), subregion (Mt Gambier and surrounds, Penola and surrounds, Millicent and surrounds) and nearest town.</li> </ul>

## 3.5 Statistical analyses

A range of bivariate and multivariate analyses were undertaken including t-tests, chi-square tests, dominance analyses, and path analyses. The bivariate t-tests and chi-square both test for statistically significant relationships between two variables. Relationships are considered statistically significant at the  $p > .05$  level.

The more advanced multivariate methods of dominance analyses and path analysis are explained in Appendix C rather than in the body of this report.





# Part 2 Results and Conclusions

## Reporting of results

Findings reported as 'significant' means that they were 'statistically significant' at the  $p = .05$  level. This means there was less than a five percent chance that the findings were due to chance. This is a convention in scientific report writing and denoted as  $p < .05$ . In some instances, scores have been rounded to one decimal place in the graphical figures. Results of the survey are typically described as average scores out of 5, using a scale from 1 to 5 where 1 is the least and 5 is the most. A score below the midpoint of 3 is considered negative or unfavourable on average, except where otherwise indicated. Results for subregions are reported as Mt Gambier, Penola, and Millicent and refer to surrounding areas as well as the town.



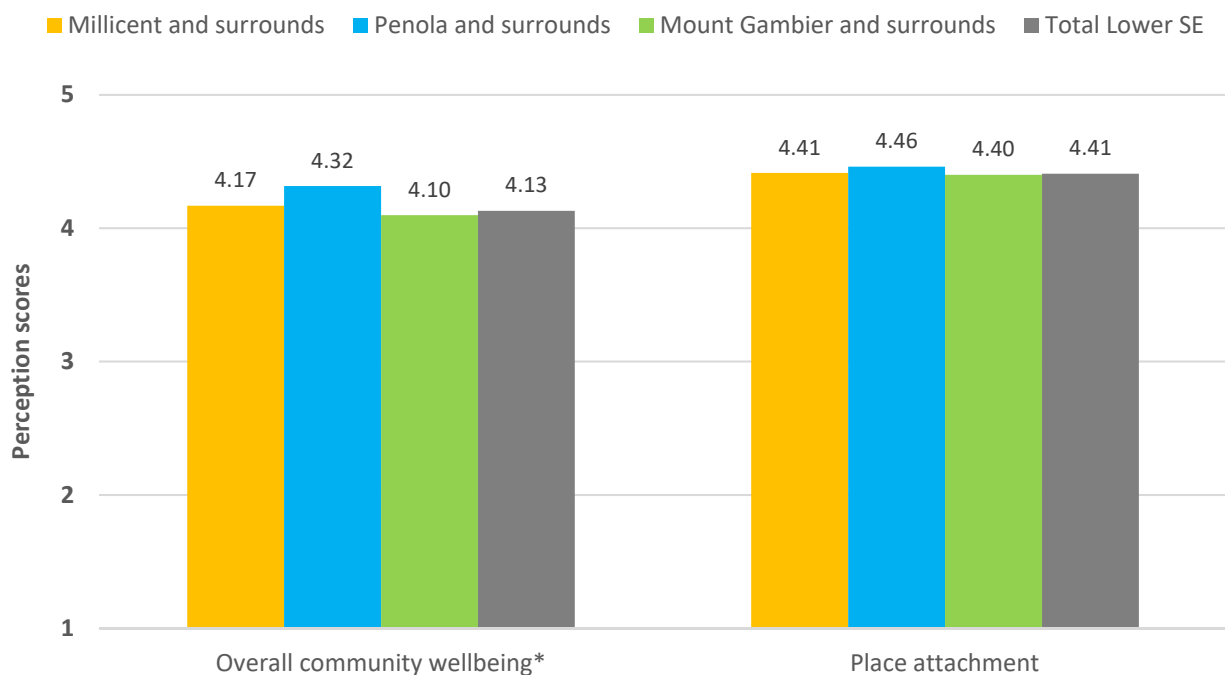
## 4 Community Wellbeing

### 4.1 Overall community wellbeing and place attachment

Community wellbeing in the three subregions was very robust with all three subregions reporting wellbeing scores greater than four out of five. Figure 11 shows overall community wellbeing scores were statistically higher for residents from Penola and surrounds than Mt Gambier and Millicent. The community wellbeing score for the total lower SE region, which combined all three subregions was high ( $M = 4.13$ ).

Place attachment was very high with all three subregions indicating a strong sense of belonging and level of pride towards their local towns and surrounding areas. Figure 11 shows no real difference between subregions for place attachment and the score for the lower SE region was very high ( $M = 4.41$ ).

Figure 11 Mean scores of overall community wellbeing and place attachment: By subregions, 2019

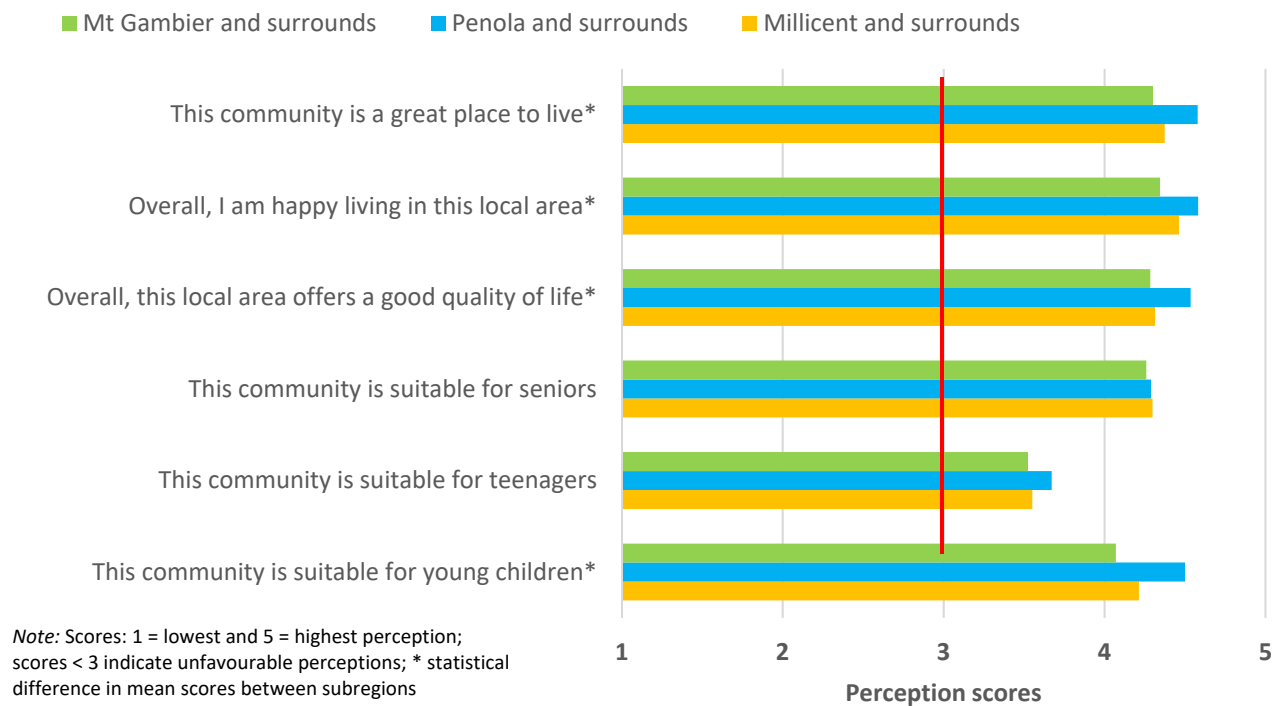


Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions;

\* statistical difference in mean scores between subregions

The individual items of overall community wellbeing showed that residents were very happy living where they do and that they viewed their communities as great places to live and offering a good quality of life. Figure 12 shows that people felt their communities were particularly suitable for young children and seniors, though less so for teenagers. Penola residents indicated statistically higher perceptions of their community than Mt Gambier and Millicent in four of the six items, as also shown in Figure 12.

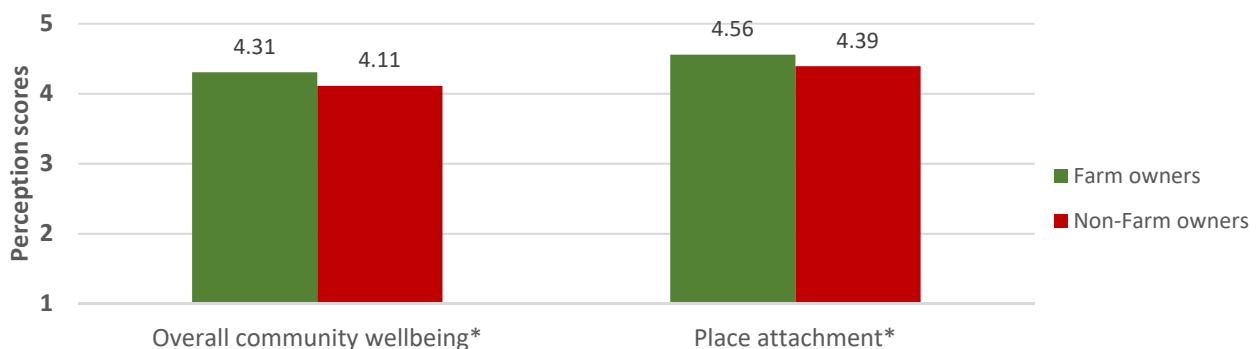
**Figure 12 Overall community wellbeing items: By subregions, 2019**



### Differences between Farm owners and Non-Farm owners

Figure 13 shows differences in overall community wellbeing and place attachment for farm owners and non-farm owners. Farm owners show statistically higher levels of both community wellbeing and place attachment than people who don't own farms. However, both cases show very high levels of community wellbeing and place attachment.

**Figure 13 Mean scores of overall community wellbeing and place attachment: By farm owners, 2019**



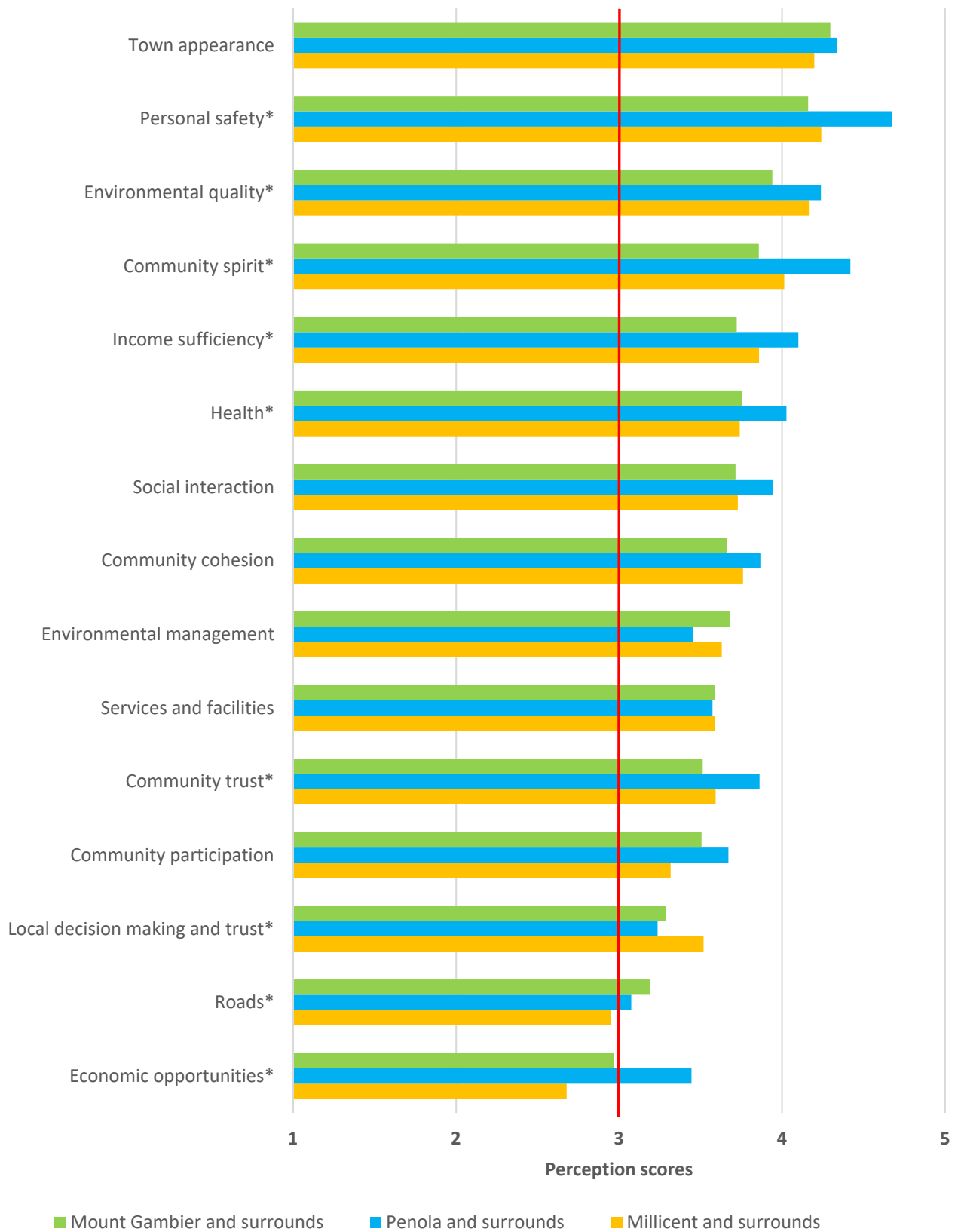
Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions;

## 4.2 Dimensions of Community Wellbeing

The survey measured fifteen different dimensions of community wellbeing and analysed differences between the subregions. As shown in Figure 14, all dimensions were rated positively on average except for economic opportunities in Millicent and surrounds, which was rated unfavourably and significantly lower than Mt Gambier and surrounds and Penola and surrounds. Two other dimensions were rated borderline unfavourable, roads in Millicent and surrounds and economic opportunities in Mt Gambier and surrounds. The remaining dimensions were perceived to be more robust with town appearance, personal safety, and environmental quality rated around four or above on average, which are high scores.

There were significant differences among the subregions in nine of the fifteen dimensions. Figure 14 shows Penola had significantly higher levels than the other subregions on seven of the wellbeing dimensions: personal safety, environmental quality, community spirit, income sufficiency, individual health, community participation, and economic opportunities. Millicent and surrounds showed significantly higher perceptions of community trust, and local decision-making processes and trust. Mount Gambier had significantly higher satisfaction with the roads and economic opportunities than Millicent, though still modest, while the environmental quality in Mount Gambier was perceived to be significantly lower than the other two subregions, though still relatively high.

Figure 14 Community wellbeing dimensions: By subregions, 2019

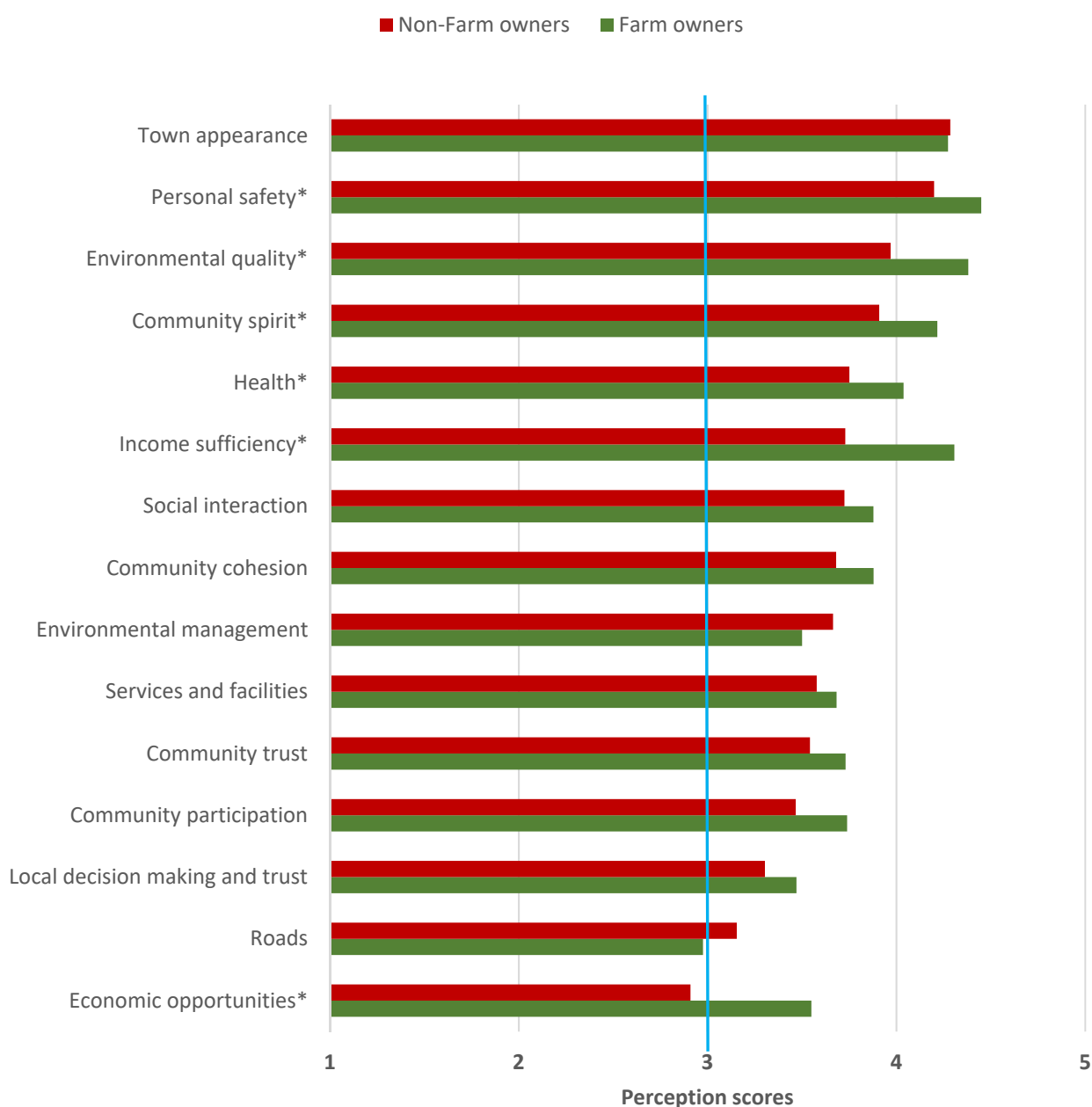


Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions; \* statistical difference in mean scores between subregions

## Differences between Farm owners and Non-Farm owners

There were significant differences between farm owners and non-farmers in six of the fifteen community wellbeing dimensions. Figure 15 shows farm owners reported significantly higher levels of personal safety, environmental quality, community spirit, health, income sufficiency, and economic opportunities. Moreover, economic opportunities were viewed quite favourably by farm owners, whereas non-farm owners viewed their economic opportunities as quite unfavourable, on average.

Figure 15 Community wellbeing dimensions: By farm owners, 2019



Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions;

\* statistical difference in mean scores between farm owners and non-farm owners

## 4.3 Most important dimensions of community wellbeing

Analyses showed that the most important wellbeing dimensions contributing towards a sense that their community was a great place to live and offered a good quality of life for all ages were not always the dimensions with the highest perceptions scores. The analyses demonstrated that across the lower SE region the biggest drivers of community wellbeing were services and facilities, the quality of the environment, perceptions of personal safety, income sufficiency, and perceptions of community trust. However, there was considerable variation among the subregions.

### Differences among the subregions

In Millicent, social aspects took on a greater level of importance in explaining community wellbeing such as the level of community spirit, the amount of social interaction, and perceptions of community cohesion all ranking as the three most important dimensions. Income sufficiency was the fourth most important dimension. The least important dimensions to community wellbeing in Millicent were individual health and roads.

In Penola, services and facilities were by far the biggest drivers of community wellbeing followed by community spirit, health, and community cohesion. In contrast to Millicent and Mt Gambier, income sufficiency was the least important dimension contributing to a sense of community wellbeing in Penola. Also unique to Penola was the relative high importance of health to community wellbeing.

In Mt Gambier services and facilities were also the biggest driver of community wellbeing, though less so than for Penola, followed by personal safety, environmental quality, and income sufficiency. The least important drivers of community wellbeing were health, community spirit, and roads. The relative lack of importance of community spirit as a contributor to community wellbeing was different from the other two smaller subregions, where community spirit was in the top two drivers of community wellbeing.

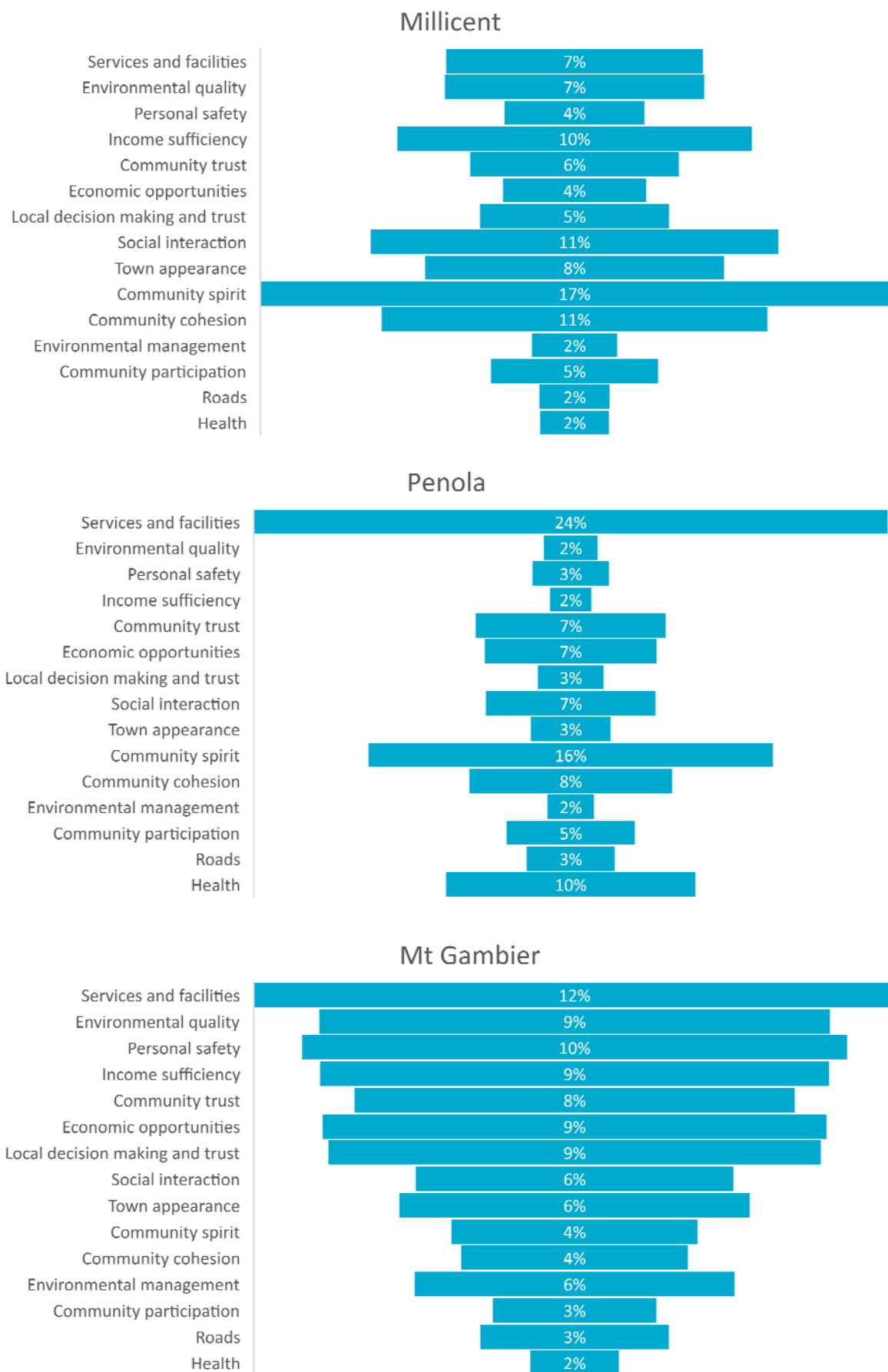
These marked differences among the three subregions suggest that initiatives for improving or maintaining wellbeing within each of the subregions need to be very place-based and respond to the aspects of community life that contribute most to community wellbeing in each subregion.

One common finding for each of the subregions was that roads were ranked as one of the lowest contributors to a sense of community wellbeing even though perceptions of roads were very low across the region. This means that even if you think roads are bad you may still feel that your community is a great place to live.

Figure 16 depicts the relative importance of each dimension to community wellbeing for each of the subregions in terms of how much variation in community wellbeing was attributable to each driver. Note the differences in the respective size of the drivers for each subregion. The value in understanding which dimensions drive community wellbeing the most is that it helps support decision making for targeted initiatives that contribute most to making the community a great place to live for residents.



Figure 16 Relative importance of each dimension to a sense of community wellbeing: By subregions, 2019



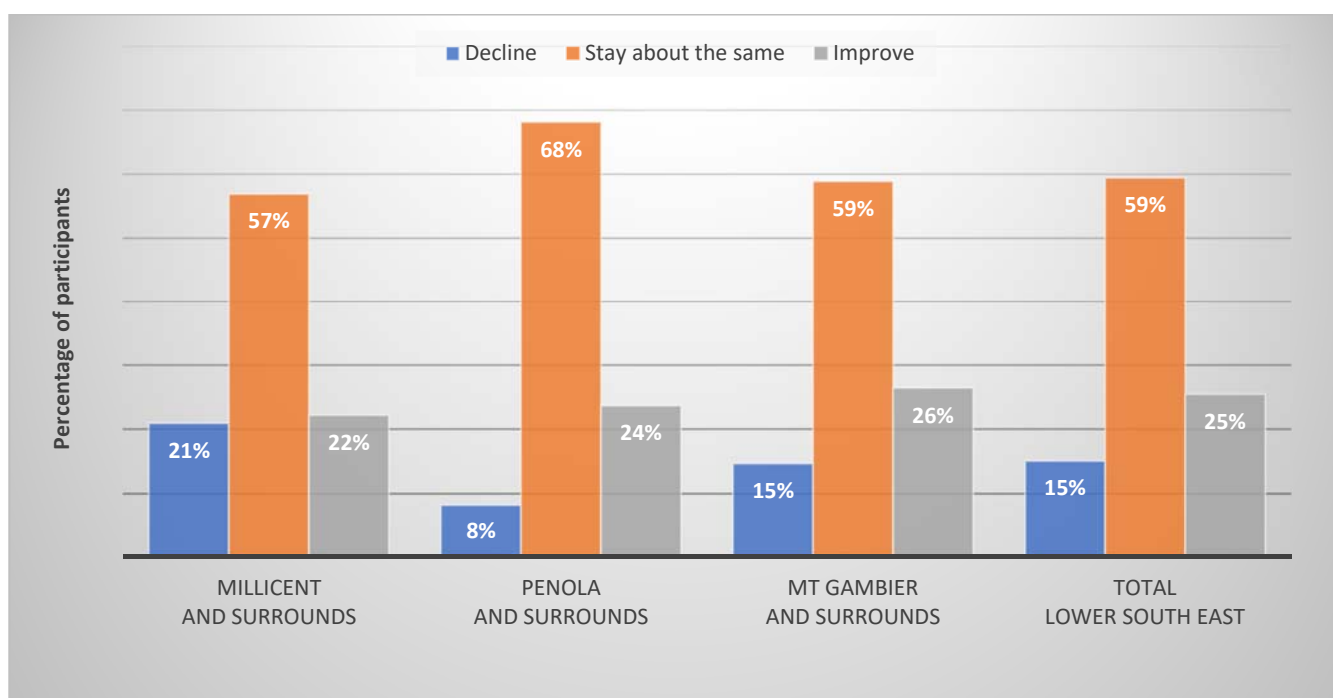


## 5 Expected future community wellbeing

Most people across the lower South East expected future community wellbeing to stay about the same in three years hence (59% of residents), as shown in Figure 17. Even so, people were quite positive in their outlook across the region in that more people felt their community wellbeing would improve in the next three years (25% of residents) than those who felt it would decline (15% of residents).

Penola residents indicated the least pessimistic outlook for their community with fewer residents indicating they thought wellbeing would decline (8%) and considerably more residents expecting wellbeing to remain about the same (68%) when compared to the other subregions. Millicent had approximately equal percentages of pessimistic and optimistic residents.

Figure 17 Expected future community wellbeing: By subregions, 2019



### 5.1 Reasons underpinning expectations of future community wellbeing

In an open-ended question, respondents were able to provide a reason for their expectations of future community wellbeing. Analysis of these responses uncovered the major themes, which are shown in Tables 4 to 6 and include example quotes.

## DECLINE

Those who felt their region would decline, frequently expressed a negative outlook on economic prospects. For example, these respondents had concerns about job losses, businesses closing and industries declining. This theme was particularly prominent in Millicent and Mount Gambier. Reasons for decline also commonly featured pessimistic views about a lack of services and facilities in the area. Other reasons described less frequently included concerns about social issues such as drug abuse and crime; population decline; deteriorating community spirit; and concerns about industry development including conventional gas.

**Table 4 Reasons for expecting future community wellbeing to decline**

THEME	PROPORTION OF RESPONSES*	EXAMPLE QUOTES
Negative economic outlook	56%	<i>"Because there is not enough work here to keep people here. We need more industry here"</i> <i>"It is all job related, so if the big employers go belly-up, then that is it for the rest of the jobs"</i>
Lack of services and facilities	31%	<i>"They're taking services away"</i> <i>"Lack of medical services in Millicent hospital, especially for elderly people"</i>
Social issues	19%	<i>"The community is divided with low and high incomes and causes issues. Just common low socioeconomic issues such as drug-use and high crime"</i>
Population decline	13%	<i>"Younger people leaving the area"</i>
Loss of community spirit	10%	<i>"Local community values are declining"</i>
Impacts from industry	7%	<i>"Contamination of underground water"</i>
Other	3%	NA

\*Responses could include multiple themes, therefore total proportion does not equal 100%

## IMPROVE

Reasons for expecting community wellbeing to improve generally mirrored the reasons for decline but viewed in a positive light. These reasons with accompanying example quotes are shown in Table 5. An improvement in services and facilities was frequently described, especially in Mount Gambier. Again, economic outlook featured prominently in responses, with respondents indicating they felt job opportunities would increase, and business and industry conditions improve. Other reasons included the strong community spirit of the area, a growing population, and general optimism for the future.

**Table 5 Reasons for expecting future community wellbeing to improve**

THEME	PROPORTION OF RESPONSES*	EXAMPLE QUOTES
Improving facilities and services	33%	<i>"Because the main facilities tend to improve and progress over time"</i> <i>"Starting to offer more for young people in the area, sporting facilities"</i>
Positive economic outlook	31%	<i>"Hopefully there'll be some more job opportunities"</i> <i>"Some new businesses are opening, employment should improve"</i>
Positive community spirit	16%	<i>"Because people do care...There is kindness here"</i> <i>"I've got 2 kids with disabilities and there's more acceptance around disabilities and more understanding"</i>

Generally optimistic	15%	<i>"Because I like to think on the positive side"</i> <i>"I guess you have to be optimistic"</i>
Increasing population	10%	<i>"A lot more new people coming into the area"</i>
Better government support	7%	<i>"Because council have got some initiative"</i>
Other	5%	NA
Don't know	4%	NA
Town upgrades, visual amenity	2%	<i>"...upgrades to old buildings and painting of murals"</i>

\*Responses could include multiple themes, therefore total proportion does not equal 100%

## STAY THE SAME

Reasons for believing community wellbeing would stay the same are displayed in Table 6 and varied greatly. However, the most prominent theme by far was the perception that the community was slow to change or had always been the same, therefore no major change was expected within a three-year timeframe. Similar themes also featured again for this response category, with many having concerns about the economy, while some felt it would remain stable. Other themes included a positive outlook on the community's spirit, concerns over local services and facilities, population stability, and a lack of community investment and planning for improving the area. A small number of respondents had concerns about the community's unwillingness and lack of initiative for change, a declining population and concerns about gas industry development.

**Table 6 Reasons for expecting community wellbeing to stay the same**

THEME	PROPORTION OF RESPONSES*	EXAMPLE QUOTES
Community slow to change	38%	<i>"Never much change around here from past experience"</i> <i>"Everything will stay the same. Not much happens in Millicent. Nothing in the pipeline to change anything"</i>
Negative economic outlook	21%	<i>"No more business or industry opportunities - on the decline"</i> <i>"Well it doesn't seem to go ahead. The shops are shutting and not going ahead anywhere"</i>
Stable economy	10%	<i>"It's been pretty stable over the past 15 years. As long the farming stays the same and main employer industry stays the same, everything will stay the same this way"</i> <i>"I'm not aware of any future plans of employment or job opportunities"</i>
Positive community	9%	<i>"I just love it, all the people are really lovely here. They help if anything goes wrong, they're all at the door"</i>
Stable population	9%	<i>"The people who live here never move away"</i>
Concerned about local services	9%	<i>"Lack of access to specialists"</i>
Lack of investment and planning	7%	<i>"I think the local government look after us but the state government don't"</i>
Unwillingness to change	4%	<i>"Things don't change in parochial towns"</i>
Population in decline	3%	<i>"Teenagers leave to get jobs"</i>
Other	3%	NA
Don't know	3%	NA
Concerned about gas industry	2%	<i>"Drilling for gas...may ruin the water supply"</i>

\*Responses could include multiple themes, therefore total proportion does not equal 100%

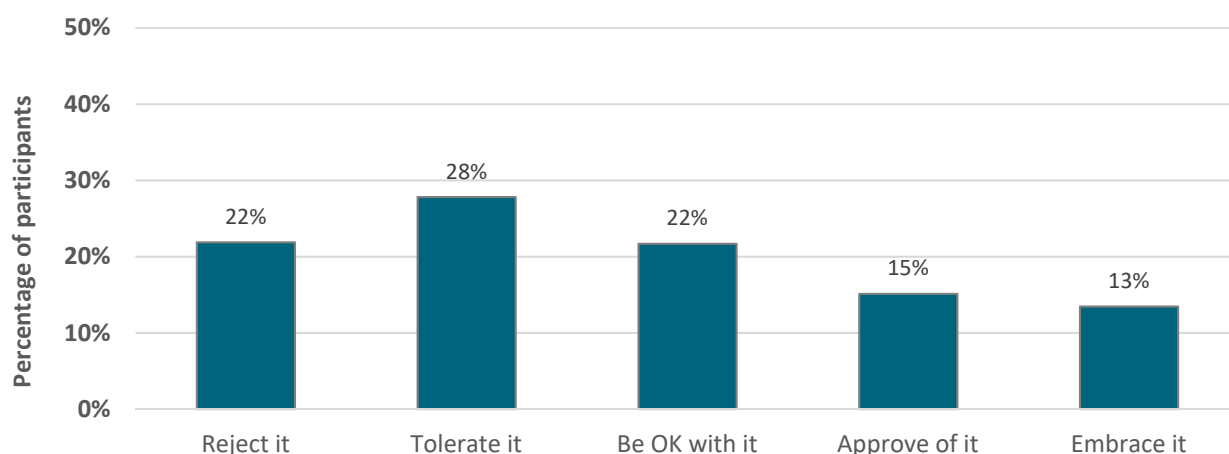
## 6 Attitudes and perceptions of conventional gas development

### 6.1 Attitudes towards conventional gas development

Attitudes towards conventional gas development in the lower SE of South Australia ranged across a spectrum of views, as show in Figure 18.

- 22% of people rejected conventional gas development
- 13% of people embraced conventional gas development
- 65% of people tolerated, would be OK with it, or approved of conventional gas development
  - 28% would tolerate it
  - 22% would be OK with it
  - 15% would approve it

Figure 18 Attitudes towards conventional gas development in the lower SE of South Australia

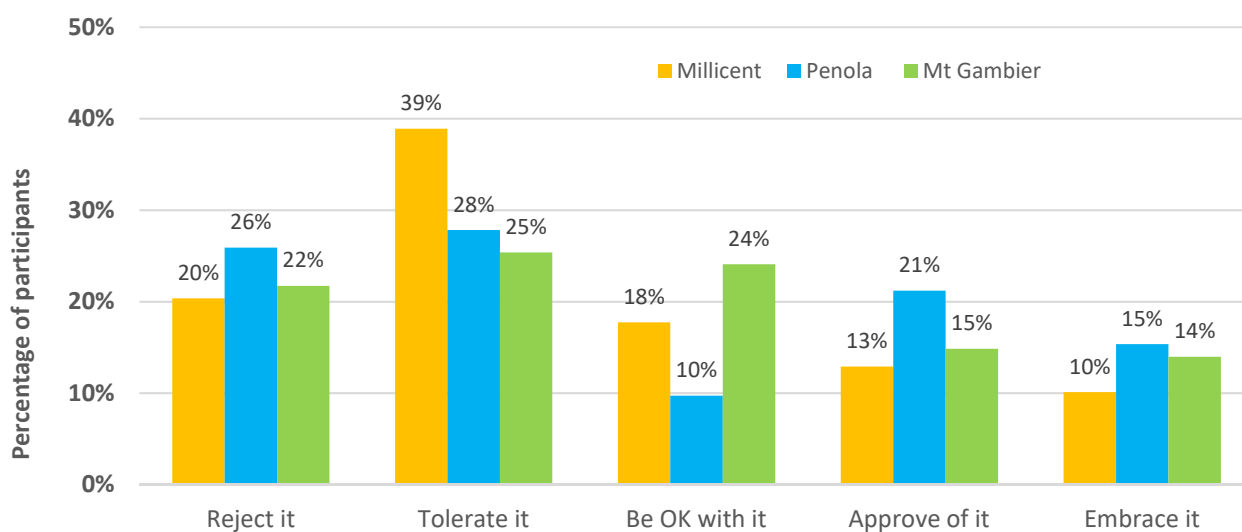


Note: Percentages rounded to the nearest whole

#### Differences among subregions

The range of attitudes differed among the subregions with residents from Millicent and surrounds showing the highest proportion of people who would tolerate conventional gas development (see Figure 19). Millicent and surrounds and Mt Gambier and surrounds also showed a more typical 'bell-curve' pattern in their distribution of attitudes. In comparison, Penola and surrounds showed a tendency for views to be more polarised with fewest people indicating the middle view, that is being 'OK with it'.

Figure 19 Attitudes towards conventional gas development in the lower SE of South Australia: By subregion, 2019

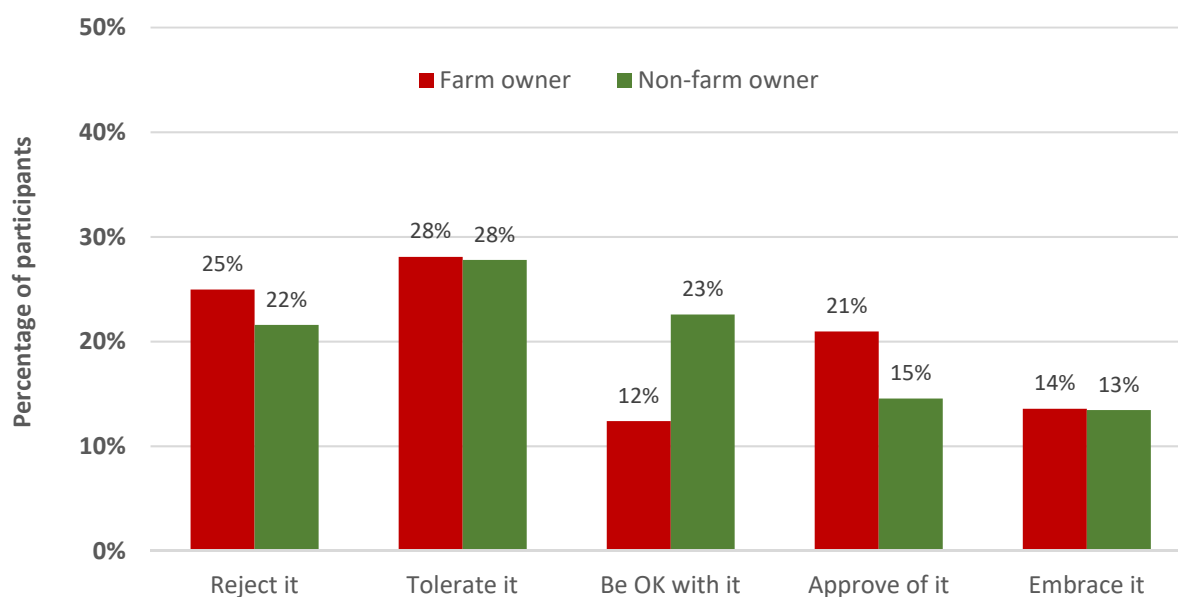


Note: Percentages rounded to the nearest whole percent

### Differences between Farm owners and Non-Farm owners

Figure 20 shows farmers also demonstrated a range of views towards conventional gas development though statistically these were not different from non-farmers. However, farmers were similar to Penola in that they showed a tendency for a more polarised spread of views towards conventional gas development with fewer people being in the middle of the distribution. 'Farmers' included residents owning more than 40 hectares or 100 acres of agricultural land, including vineyards.

Figure 20 Attitudes towards conventional gas development in the lower SE of South Australia: By farm ownership, 2019



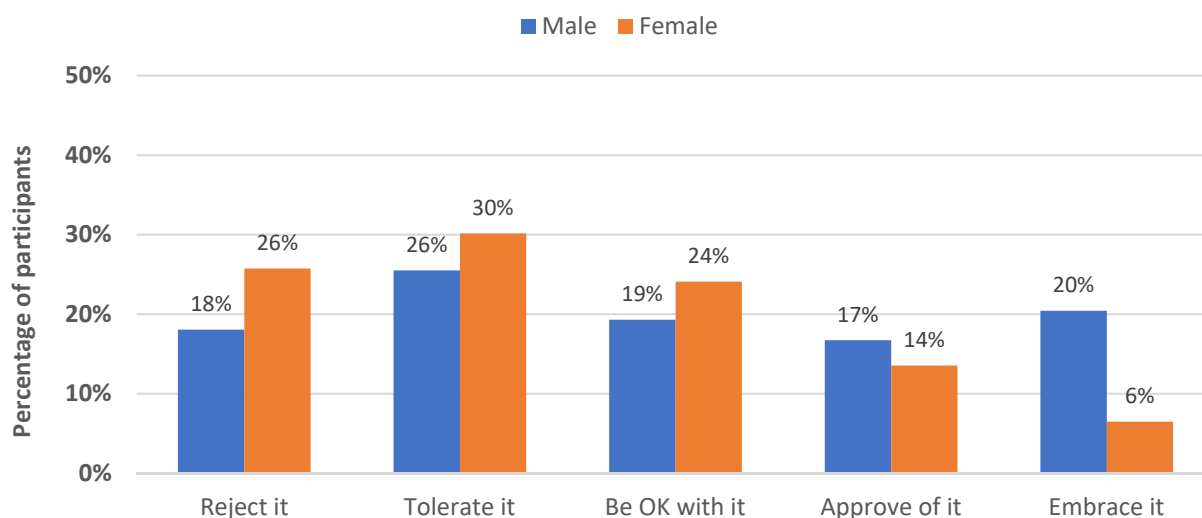
Note: Percentages rounded to the nearest whole percent

### Differences based on gender and income levels

Statistically significant differences in attitudes towards conventional gas development were found based on gender and income levels as demonstrated in Figure 21 and Figure 22.

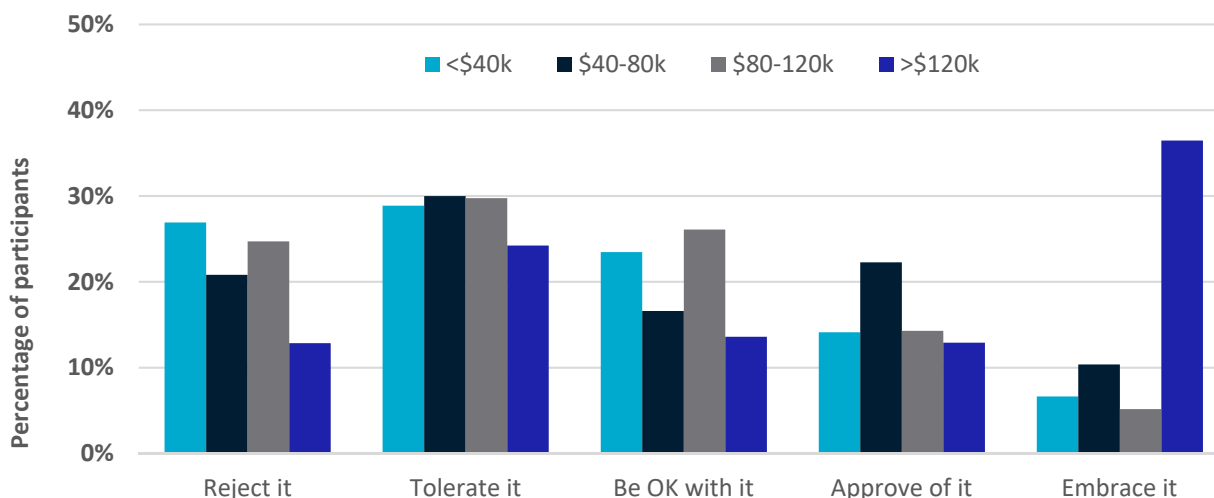
Figure 21 shows that men had significantly more positive views towards conventional gas than women. In terms of income, people with household incomes greater than \$120,000 also had more positive views, as shown in Figure 22.

Figure 21 Attitudes towards conventional gas development in the lower SE of South Australia: By gender, 2019



Note: Percentages rounded to the nearest whole percent

Figure 22 Attitudes towards conventional gas development in the lower SE of South Australia: By income, 2019

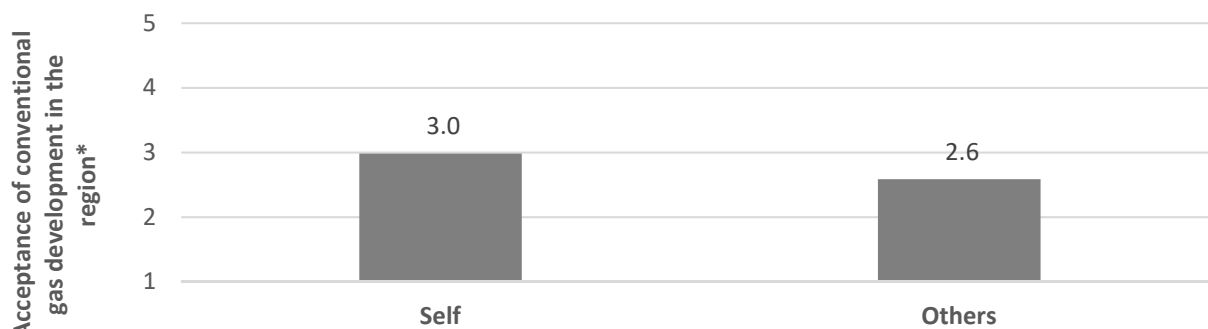


Note: Percentages rounded to the nearest whole percent

### Difference between own attitude and others

Residents were also asked how accepting they were of conventional gas development in the region from 1 = 'not at all accepting' to 5 'very accepting', as well as how accepting they thought others were in their local community. Figure 23 shows that, on average, residents thought that others in the lower SE region of SA were significantly less accepting than they were themselves.

Figure 23 Acceptance of conventional gas development in the lower SE of SA: Self vs perceptions of others



Note: 1 = Not at all accepting, 5 = Very accepting

\* statistical difference in mean scores between self and others

## 6.2 Feelings towards conventional gas development

The survey measured four feelings towards conventional gas development, two positive feelings (feeling optimistic and feeling pleased) and two negative feelings (feeling angry and feeling worried).

Results showed people did not have overly strong feelings on average towards conventional gas development across the lower SE region. On average, people were not overly pleased ( $M = 2.86$ ), nor overly optimistic ( $M = 2.87$ ), nor angry ( $M = 2.33$ ), nor worried ( $M = 2.86$ ). Figure 24 shows there were also no statistical differences in the level of feelings towards conventional gas development among the three subregions with all areas demonstrating not feeling angry on average and fairly neutral levels of feelings for worried, pleased and optimistic.

Figure 24 Feelings towards conventional gas development in the lower SE of SA: By subregion, 2019

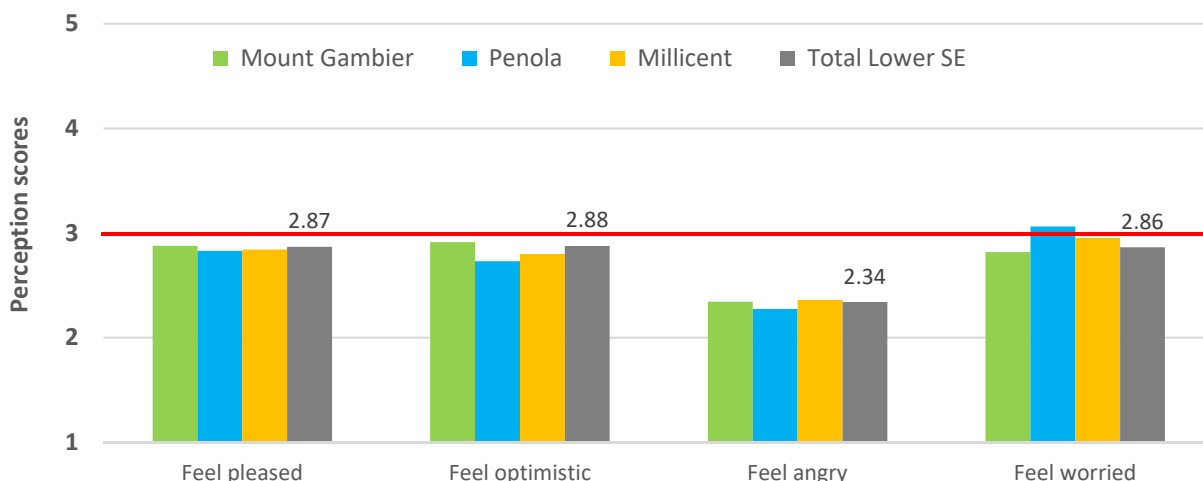
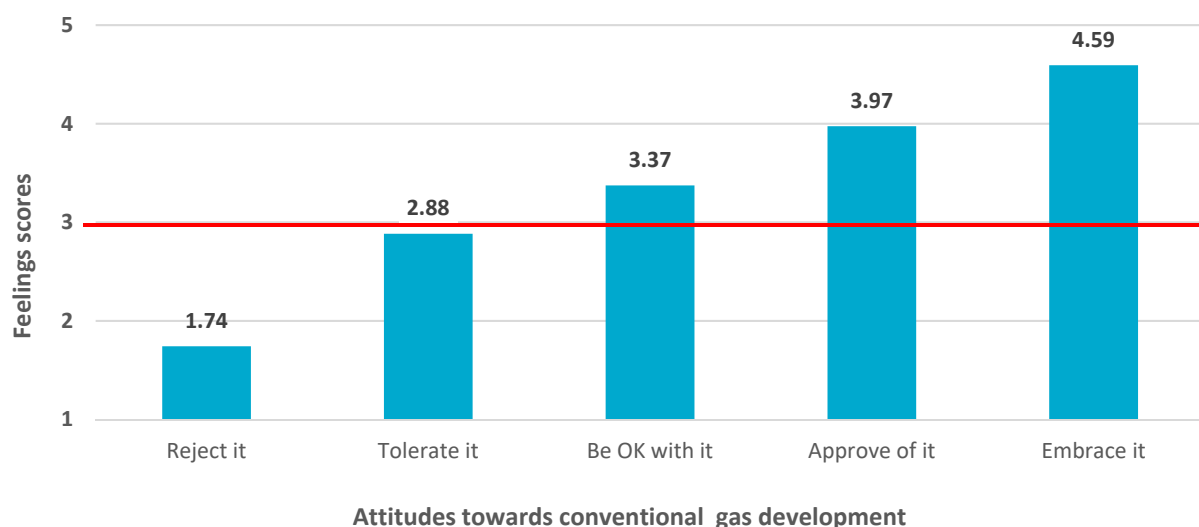


Figure 25 shows that residents rejecting conventional gas development in the lower SE had negative feelings toward such development on average. Those tolerating it had more neutral feelings, while those OK with it, approving of it or embracing it had positive feelings toward conventional gas development in the lower SE region

Figure 25 Feelings associated with each attitude toward conventional gas development in the lower SE of SA

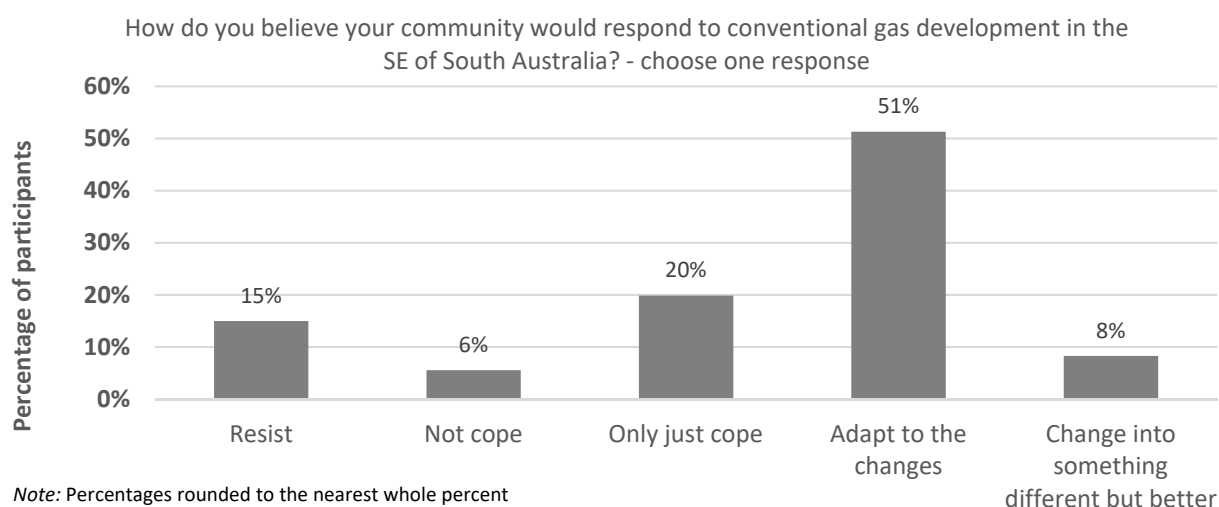


## 6.3 Adapting to conventional gas development

Most people believed that their community would adapt to the changes associated with conventional gas development (51% of residents) or transform into something different but better (8% of residents). Figure 26 shows that just over 40% of residents believed that their community would resist the changes (15% of residents), not cope (6% of residents) or only just cope with the changes (20% of residents). This did not differ significantly between subregions or whether residents owned farms or not.



Figure 26 Perceptions of community responses to conventional gas development in the lower SE of SA



## 6.4 Perceptions about conventional gas development and the sector

### 6.4.1 Summary of the underlying drivers

Previous research and interviews with stakeholders identified a range of issues that underpin people's overall attitudes and feelings towards conventional gas development. The survey asked over 70 questions related to these issues, which are grouped together into key themes or underlying drivers. For example, trust in the gas industry or perceptions of governance are each a key theme or underlying driver.

The underlying drivers include:

1. **Perceived impacts:** more immediate issues, possible future issues, risk manageability, risk severity
2. **Perceived Benefits:** local benefits, regional and societal benefits
3. **Distributional fairness:** perceptions of how fairly impacts and benefits are shared
4. **Trust in the onshore gas industry**
5. **Relationship quality:** perceptions of the quality of the relationship between the industry and community
6. **Procedural fairness:** perceptions of how fairly the industry will treat the community
7. **Governance:** perceptions of formal governance (regulations and compliance), government engaging with communities, working collaboratively with communities, trust in state departments
8. **Knowledge:** awareness and understanding of the onshore conventional gas industry

We measured each of the eight key drivers, with some drivers having sub-components. For example, perceived impacts is a key driver and is broken down into immediate impacts and possible future impacts.

Table 7 briefly describes each driver and sub-component and presents the average score for each for the total lower SE region. It also includes some additional perception scores about risk and information needs. Figure 27 illustrates these scores for each subregion and the average score for each subregion is presented in Appendix E . A more detailed analysis of each key driver is found in Section 7, which allows the reader to more deeply engage with each of the concepts and gain a more specific understanding of the driver.

**Table 7 Summarising the underlying drivers and perception scores for the lower SE region**

UNDERLYING DRIVER	DESCRIPTION EXAMPLES	PERCEPTION SCORES LOWER SE REGION
<b>PERCEIVED IMPACTS OVERALL</b>		3.43
- More immediate issues	Damage to underground aquifers; depletion of underground water, dust, noise, and light pollution; a threat to 'clean' and 'green' brand; threat to rural liveability; reduces region's visual attractiveness; impact on farm property values; increased traffic; community division; health impacts	3.26
- Possible future issues	Fracking being introduced after the moratorium; unconventional gas being introduced over time, conventional gas development extending into other farming areas; well integrity over time	3.86
Risk manageability	Risks to underground water are understood by science; are understood by the community; are manageable	3.03
Risk severity	Risks potentially uncontrollable; potentially disastrous; can adversely affect future generations	3.61
<b>PERCEIVED BENEFITS OVERALL</b>		3.05
- Local benefits	Local employment; local business opportunities; opportunities for young people to stay in region; corporate support for local community activities; additional services and facilities; cheaper gas for local industries; cheaper gas for residents	2.98
- Regional and societal benefits	Improving energy security in the region; supporting the viability of big gas users; make the region more attractive to new businesses and industry; boosting the wider state economy; role in transitioning to renewable energy; role in SA future energy mix	3.13
<b>DISTRIBUTIONAL FAIRNESS</b>	Fair to have conventional gas development in the region if your local council compensated accordingly; your community received a fair share of the benefits; if farmers compensated fairly; if good arguments for having it in this region	3.30
<b>TRUST IN GAS COMPANY</b>	Trust local gas companies to act responsibly; in local community's best interest's; trust their capability; overall extent of trust	2.60
<b>RELATIONSHIP QUALITY</b>	Gas companies would be accessible or easy to contact; open, honest and transparent; engage in genuine two-way dialogue; respond to issues in a timely manner	2.39
<b>PROCEDURAL FAIRNESS</b>	Gas company would listen to and respect community opinions; be prepared to change its practices in response to community sentiment; inform residents of important developments; give opportunities for communities to participate in decision making	2.45
<b>GOVERNANCE OVERALL</b>		2.84
- Formal governance	Legislation and regulation could be counted on to ensure companies did the right thing; The EPA would be able to hold companies accountable for any breaches	3.02
- Engaging community	The local council would listen to and advocate for local communities about gas development; the EPA would listen to and respond to community concerns; and inform local communities of issues with gas development as they arise.	3.00
- Working collaboratively	Government, communities, and gas companies can work together to address problems; to make opportunities; share information, resources and learnings; proactively plan for future changes; manage any changes effectively	2.81
- Trust in state departments	Trust state governing bodies overseeing conventional gas development to act responsibly; in local community's best interest's; trust their capability	2.57
<b>KNOWLEDGE</b>	How much do you feel you know about the conventional gas industry; how aware are you that hydraulic fracturing is not needed to extract conventional gas; a relatively small amount of water is used; about the differences between conventional and unconventional gas	3.03
<b>Need for more information</b>	How much more information do you feel you need about the local conventional gas industry	3.39

## Summary of perceptions

- Concerns about impacts overall were moderate ( $M = 3.43$ ), but possible future issues, such as introducing fracking in the future were significantly more concerning to residents than the more immediate impacts such as impacts from dust, noise and light. Perceptions that risks from gas development could be managed were marginal ( $M = 3.03$ ), whereas the severity of risks from gas development were viewed as moderately high ( $M = 3.61$ ).
- Benefits were perceived to be very modest ( $M = 3.05$ ) with residents neither agreeing nor disagreeing that there would be benefits on average. Residents did not identify local benefits as very significant and viewed wider regional and societal benefits that onshore gas development would bring as more favourable.
- Distributional fairness scores were moderate ( $M = 3.30$ ) indicating that people thought it fair on average provided the farmer and the community was compensated accordingly by some way of benefit.
- Trust in gas companies was limited ( $M = 2.60$ ) and views about how the gas company would treat locals (relationship quality and procedural fairness) were also unfavourable and likely driving this low level of trust.
- Perceptions of governance overall was also viewed as limited ( $M = 2.84$ ), though people had more confidence in governments ability to regulate and engage with communities than they had for working collaboratively with government and trust in governing bodies.
- Knowledge levels about conventional gas development and an understanding of the differences between conventional and unconventional gas was modest ( $M = 3.03$ ) with people indicating a need for more information ( $M = 3.39$ ).

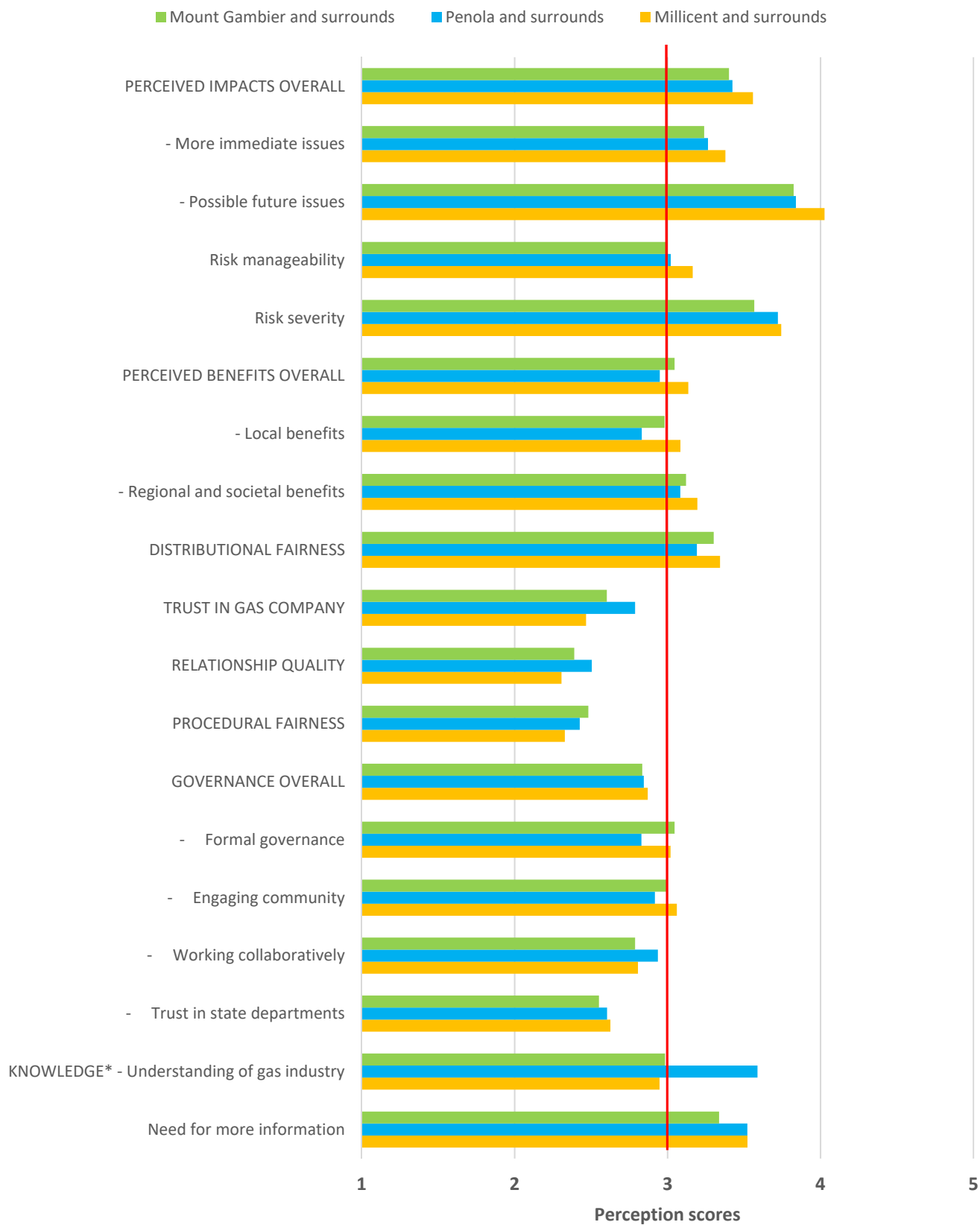
## Differences among subregions

Figure 27 shows no real difference among the subregions in the drivers of overall attitudes and feelings towards conventional gas development except that the level of knowledge was statistically higher for residents of Penola and surrounds than in other subregions.

## Differences between Farm owners and Non-Farm owners

No real differences were identified between farmers and non-farmers except for knowledge levels, where the knowledge levels of farmers about the gas industry was significantly higher than non-farmers.

Figure 27 Perceptions about conventional gas development in the lower SE of SA: Underlying drivers by subregion



*Note:* Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions except perceived impacts where higher scores mean greater concern; \* statistical difference in mean scores between subregions

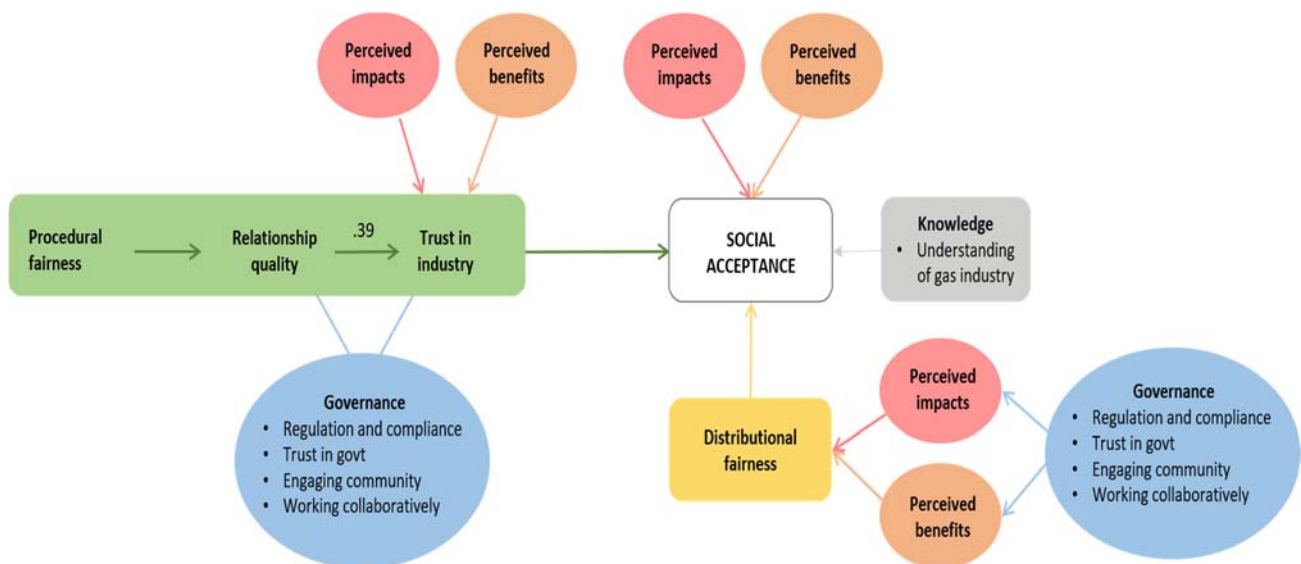
## 6.5 Model of social acceptance: A framework for explaining trust and social acceptance of conventional gas development

Statistical modelling of the eight key factors contributing to trust and social acceptance showed how the different factors work together to shape people's overall attitude or level of acceptance towards conventional gas development. It also shows the factors important to trust and a sense of distributional fairness.

As Figure 28 shows, the model demonstrates that people's trust and acceptance of the industry is dependent on a range of factors. Moreover, each factor needs to be addressed and improved if people's trust in industry and acceptance of conventional gas development in their communities is to improve.

The relationships between all these factors were positive except for perceived impacts, which demonstrated negative relationships. A positive relationship means that when a person perceives one factor to be high, they are more likely to perceive the corresponding factor to also be high. In contrast, a negative relationship means that when a person perceives one factor to be high, they are more likely to perceive the other factor to be low.

Figure 28 CSIRO model of social acceptance



### 6.5.1 How the model works

Analysis of the statistics show the model works extremely well to explain acceptance; however, there are differences between the subregions in the relative importance of each of the factors. Figure 29 and Figure 30 show the statistics for the Mt Gambier and Penola-Millicent subregions respectively. The main difference between the two models relates to perceptions of benefits, such that benefits are not a big driver of acceptance for people in Mt Gambier, unlike residents in Penola and Millicent where benefits are more important for acceptance in the industry.

Looking at the size of the numbers on the arrows in these figures gives an indication of the size of a factor's importance in determining the perception the arrow is pointing to. This means the larger the number the more important the factor. The percentages in boxes show how much variation in that perception is explained by the factors pointing to it.

#### The main points in the model and differences among the subregions

- Perceived impacts and benefits both act directly on acceptance.
  - Perceived impacts is the main direct driver of acceptance or lack thereof.
  - Perceived benefits are much more important to acceptance in Penola and Millicent. In contrast, benefits are not a significant direct driver of acceptance in Mt Gambier.
- Perceived impacts and benefits also act indirectly to influence acceptance
  - Perceived impacts and benefits contribute to people's perceptions of distributional fairness; that is, how much they believe it is fair in terms of how costs and benefits are distributed and shared.
  - Perceived impacts also predict how much residents in Penola and Millicent trust the conventional gas industry, though not for residents in Mount Gambier and surrounds.
- Perceptions of trust in the industry is largely determined by the quality of the relationship industry has with community and the procedural fairness by which they treat their community
  - Good governance is also very important for building trust in the industry.
- Good governance of the industry supports relational aspects between communities and the gas companies and beliefs about distributional fairness.
  - This means compliance, regulations, planning, collaborating, engaging with communities, and trust in gas governing bodies all shape people's views of how much they trust industry and how fair they believe it is for their community.
  - Governance acts indirectly on distributional fairness by enhancing perceptions that benefits and impacts are fairly distributed to communities.
- Perceptions of distributional fairness are important factors that directly influence acceptance
  - Benefits are about four times as important as impacts in driving this sense of fairness.
- The influence of knowledge is not straightforward as residents rejecting conventional gas development can also be confident in their industry knowledge. Beliefs about risk manageability and severity also help to shape people's level of concerns about impacts.
  - For example, when people were confident in their knowledge AND believed the risks to be manageable, they were less concerned about impacts. However, if they were confident in their knowledge but thought the risks were not manageable, they were more concerned about impacts.

Figure 29 Model of social acceptance: Mount Gambier and surrounds

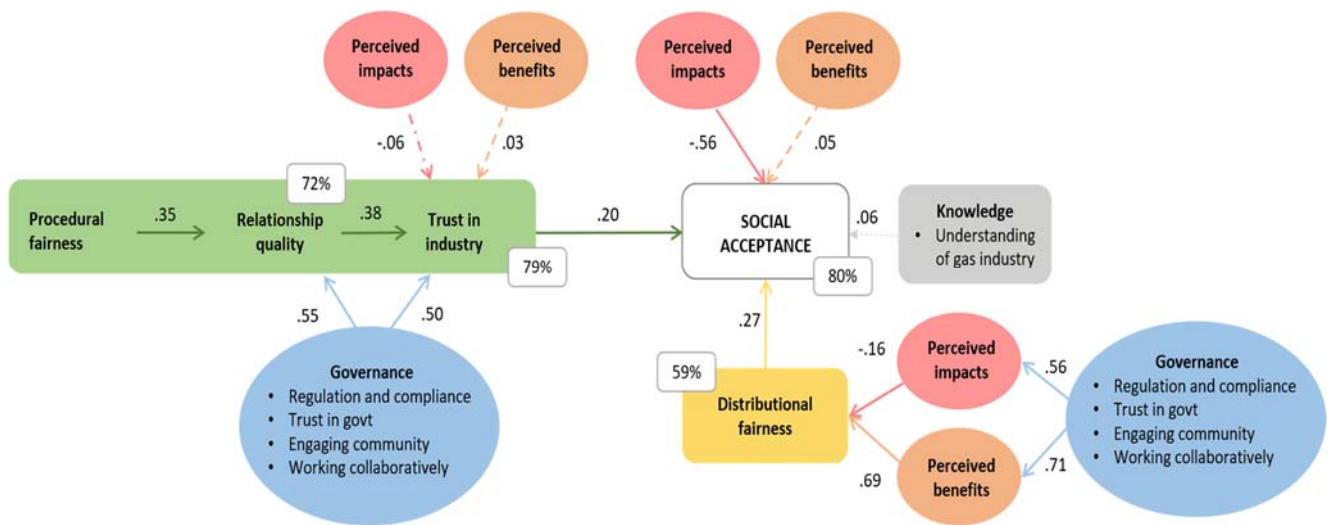
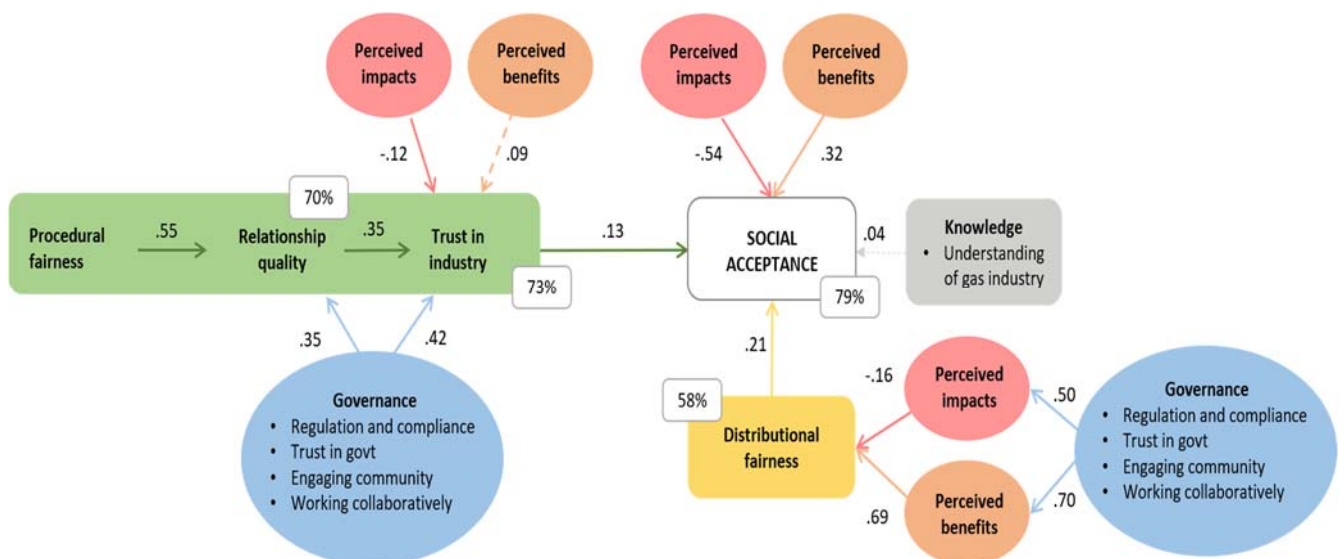


Figure 30 Model of social acceptance: Penola and surrounds and Millicent and surrounds combined





## 7 Deeper dive into the underlying drivers of social acceptance

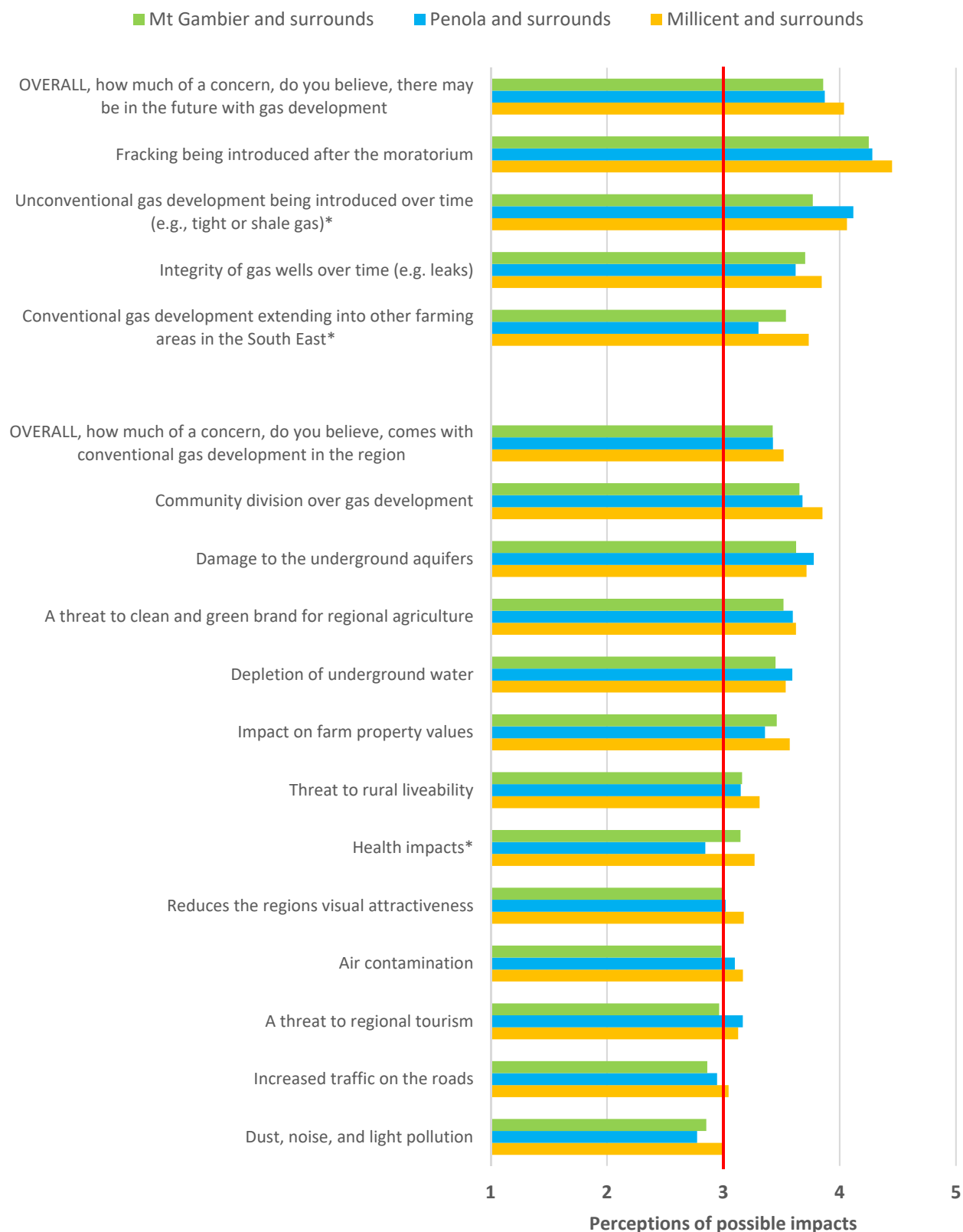
### 7.1 Possible industry effects: Concerns and benefits

#### 7.1.1 Perceived impacts

The greatest concerns about possible negative effects of conventional gas development in the SE of South Australia related to possible future issues such as fracking being introduced after the moratorium, unconventional gas development being introduced over time, and maintaining the integrity of gas wells over time from possible gas leaks. Concerns for some more immediate issues were moderately high with concern about community division over gas development, damage to underground aquifers, and a threat to the region's clean and green brand raising most concern. In contrast, concerns related to dust, noise and light pollution, increased traffic on roads, and threat to regional tourism were of least concern, and not of concern to residents on average.

Figure 31 shows that these concerns were similar across the three subregions, with concerns about possible health impacts the only concern statistically different between subregions. Penola residents indicated statistically lower levels of concern for health impacts than residents from Mt Gambier and Millicent.

Figure 31 Perceived impacts about conventional gas development in the lower SE of SA: By subregion, 2019



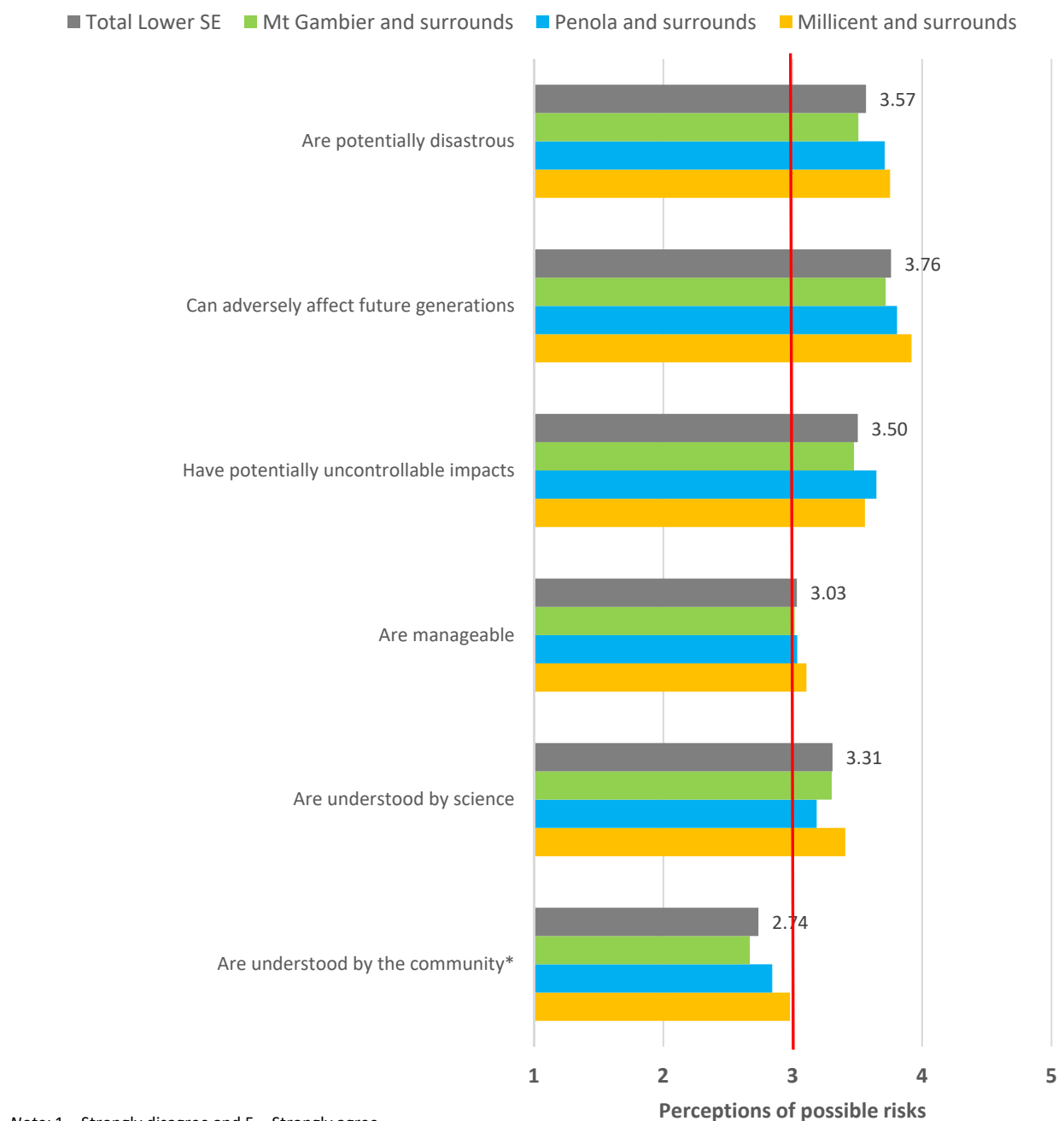
Note: 1 = not at all concerned and 5 = very concerned

\* significant difference between subregions

### 7.1.2 Perceived risk

People tended to view the risks associated with conventional gas development as moderately high. They felt the risk of possible adverse effects for future generations to be of greatest concern ( $M = 3.76$ ) and that the impacts were not very manageable ( $M = 3.03$ ), nor understood that well by science ( $M = 3.31$ ), and even less well understood by the community ( $M = 2.74$ ). Figure 32 shows these views were similar across the region, except for perceptions of how well risks were understood by the community which was statistically lower in Mt Gambier.

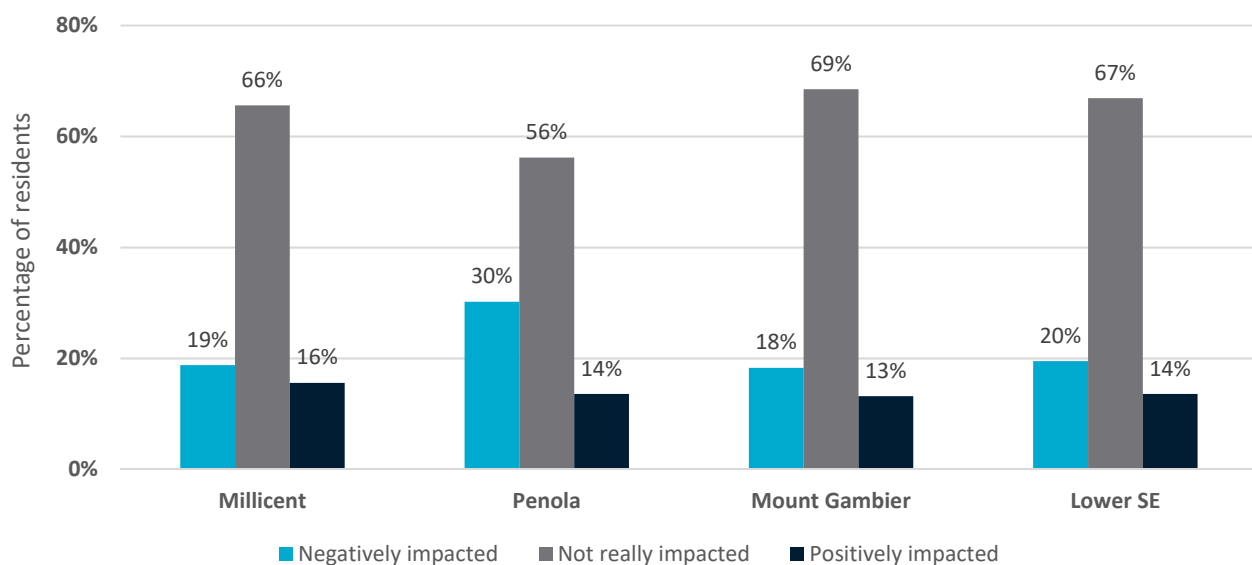
Figure 32 Perceptions of risk from conventional gas development in the lower SE of SA: By subregion, 2019



### 7.1.3 Personal impacts

Most residents in the lower SE region (67%) felt they would not really be impacted by conventional gas development in the region at the time of the survey (see Figure 33). This was also the case in each of the three subregions, though 30% in Penola and surrounds thought they would be negatively impacted. This figure was less in the other two subregions. A relatively small percentage of residents in the lower SE felt that they would be positively impacted (14%).

**Figure 33** Percentage of residents feeling they would be personally impacted by conventional gas development in the lower SE of SA



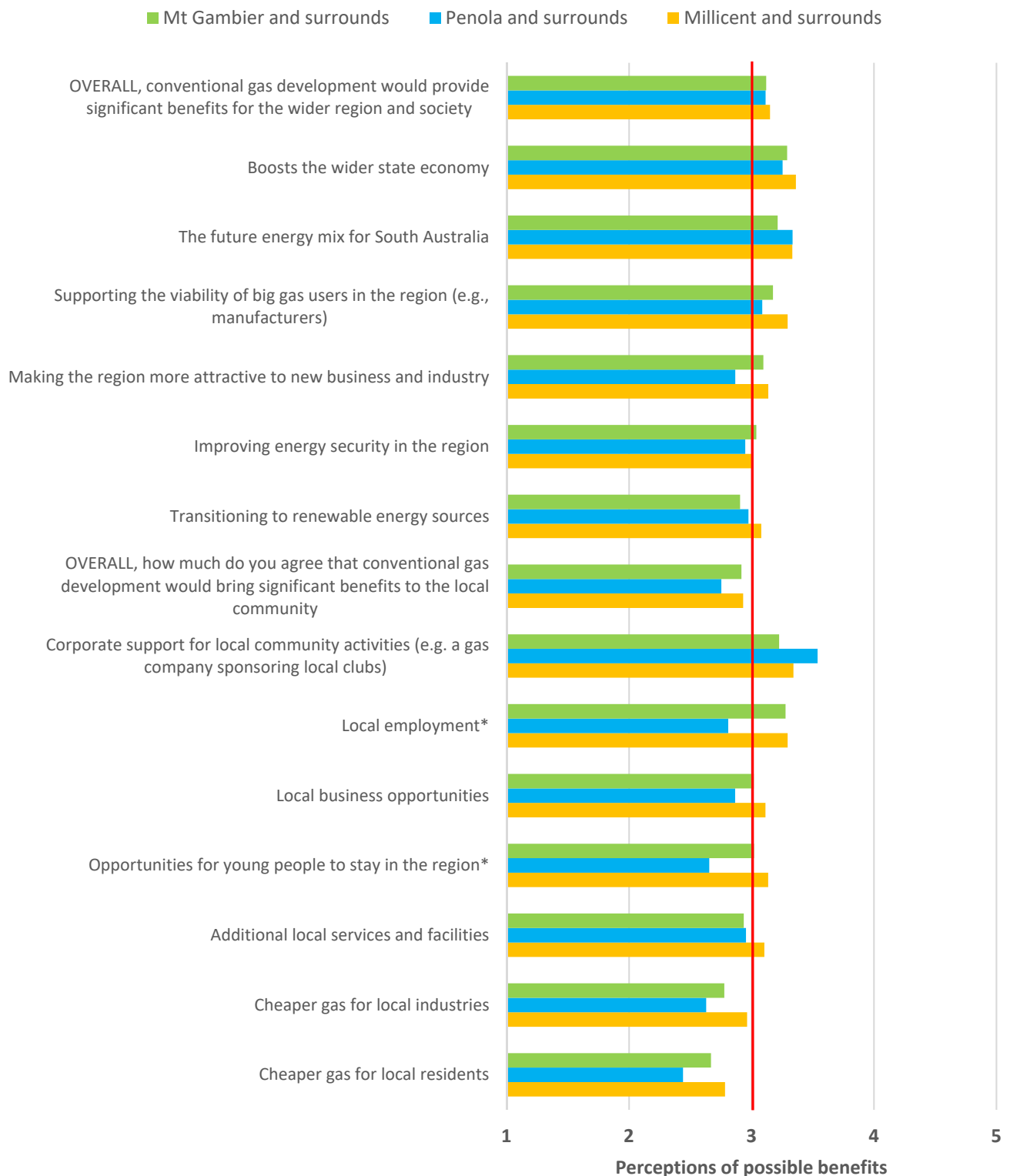
Analyses showed that people's perceptions of being personally negatively impacted corresponded to holding unfavourable attitudes and feelings toward conventional gas development in the region. Perceptions of being personally and positively impacted related to favourable attitudes to such development. Those who felt that they would not really be impacted held more neutral or slightly favourable attitudes and feelings on average.

### 7.1.4 Perceived benefits

Perceptions of benefits from conventional gas development were only modest with people indicating benefits to the wider region and society would be greater than benefits to the local community. The greatest benefits to the wider region and society were perceived to be the boost to the state economy and the energy mix for SA, while the highest local benefits were seen to be the corporate support that may come from gas companies to local communities, for example, financial support to local clubs. In contrast, results showed people did not believe there would be cheaper gas available for local industries or for local residents. On average people thought there would only be modest benefits for the local community from gas development.

Figure 34 shows, these views were similar across the region except for Penola and surrounds where residents' perceptions of conventional gas development providing local employment or opportunities for young people to stay in the region were statistically lower than Mt Gambier and Millicent, and disagreeing about these benefits on average.

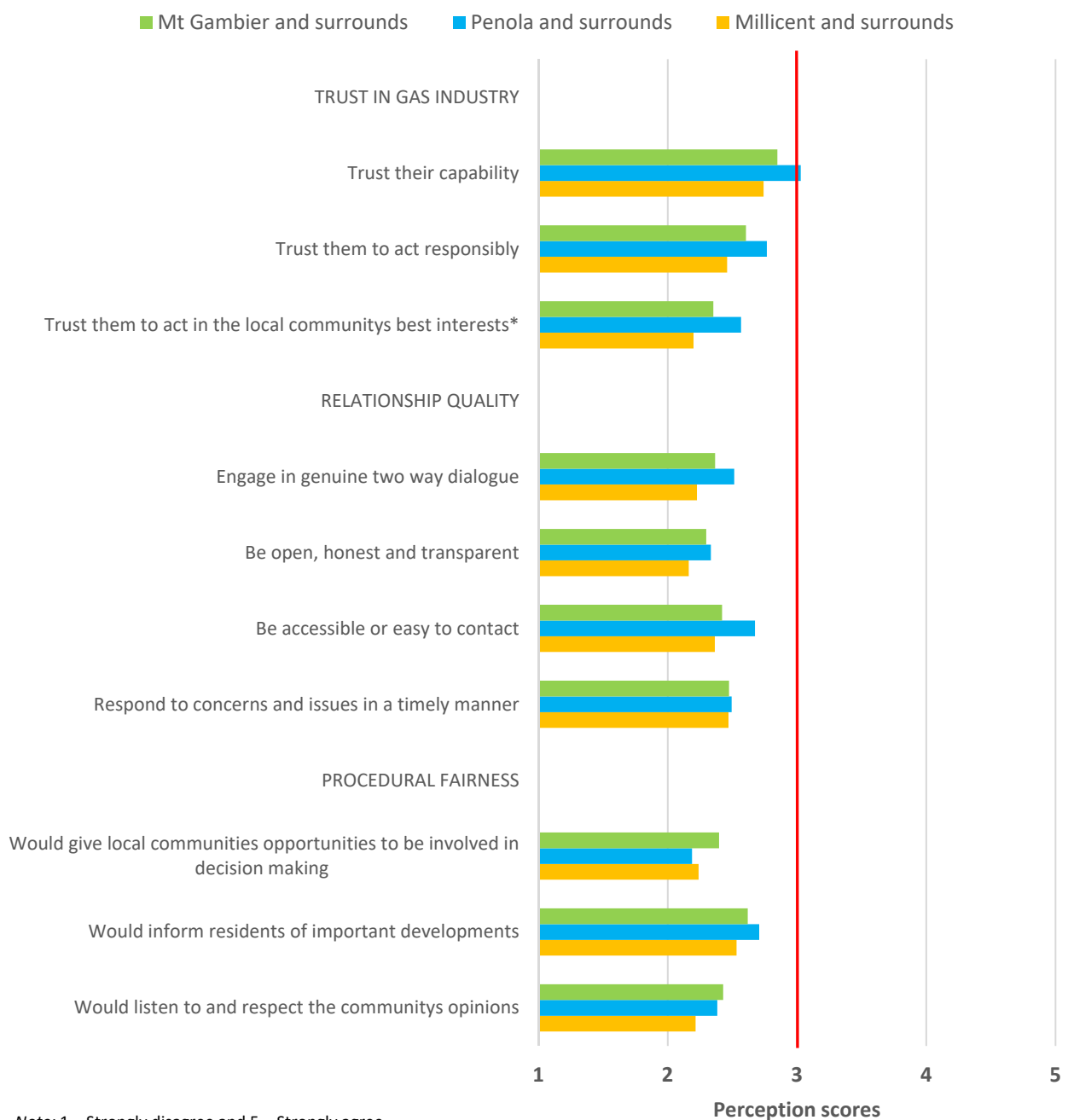
**Figure 34 Perceived benefits from conventional gas development in the lower SE of SA: By subregion, 2019**



## 7.2 Industry and community relationship: Trust in industry, relationship quality, and procedural fairness

Trust in gas companies was low, particularly trust in a gas company to act in the community's best interests. Residents also didn't expect that a gas company would treat their local community fairly and that they would conduct their relationships with communities in an open and honest way. Figure 35 shows these views were similar across the lower SE region, though Penola was significantly more trusting of gas companies acting in the community's best interests. However, trust was still low in Penola on average.

**Figure 35 Perceptions of trust in industry, relationship quality, and procedural fairness in the lower SE of SA: By subregion, 2019**



Note: 1 = Strongly disagree and 5 = Strongly agree

\* significant difference between subregions

## 7.3 Governance: Trust in government, regulations, engaging and working with the community

Figure 36 shows that perceptions of government authorities, such as the EPA, to hold gas companies to account were modest and that confidence in legislation and trust levels in state departments were low. The highest levels of confidence were in the EPA to listen and respond to community concerns and the local council to listen and advocate for the local community. These perceptions were similar across the lower SE region.

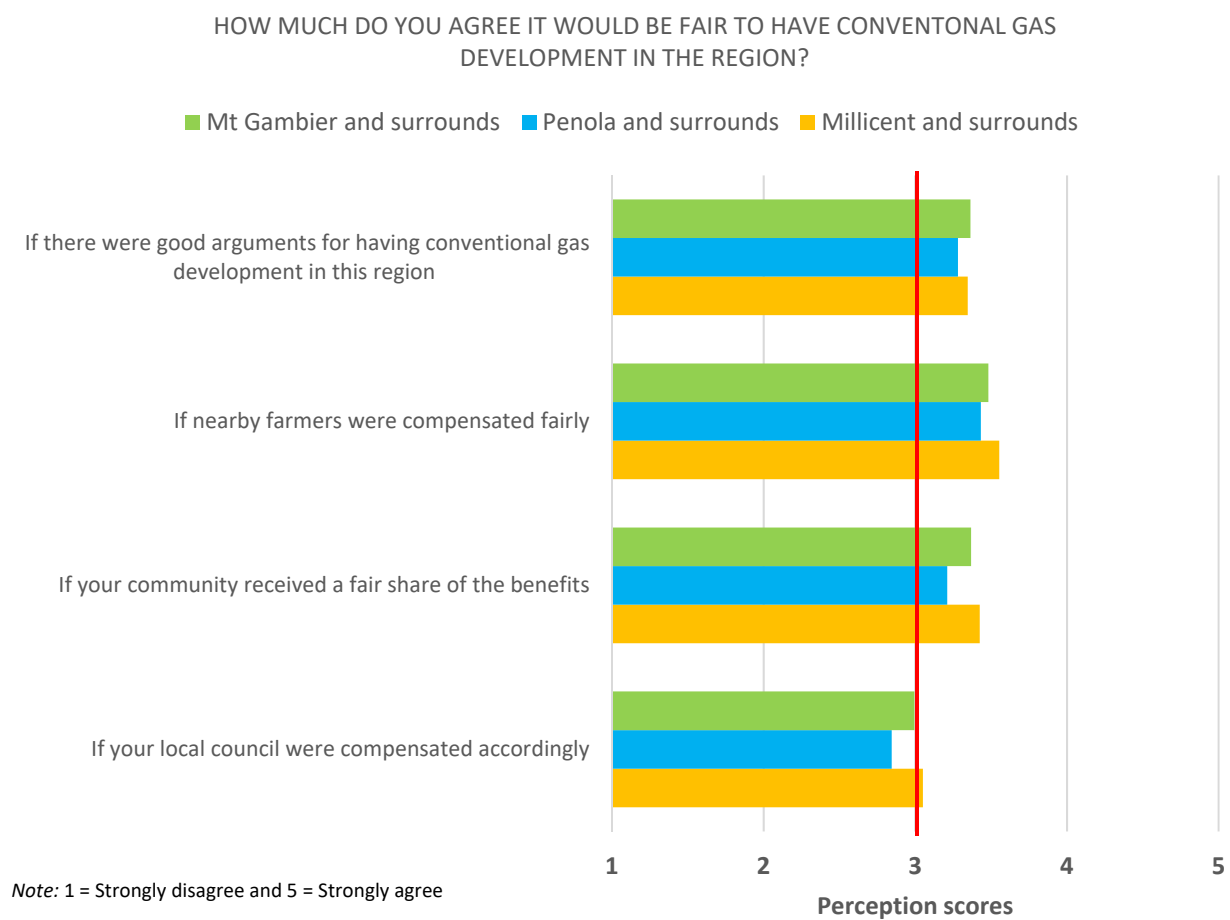
Figure 36 Perceptions of formal governance, informal governance, and trust in government: By subregion, 2019



## 7.4 Distributional fairness: Sharing costs and benefits

Figure 37 shows that residents agreed gas development in the region would be fairer if nearby farmers were compensated fairly, if the local community received a fair share of the benefits, and if they could see good arguments for having conventional gas development in the region. Residents were less sure about whether compensating local councils would make it fair. There were no statistical differences among the subregions.

Figure 37 Perceptions of distributional fairness in the lower SE of SA: By subregions, 2019



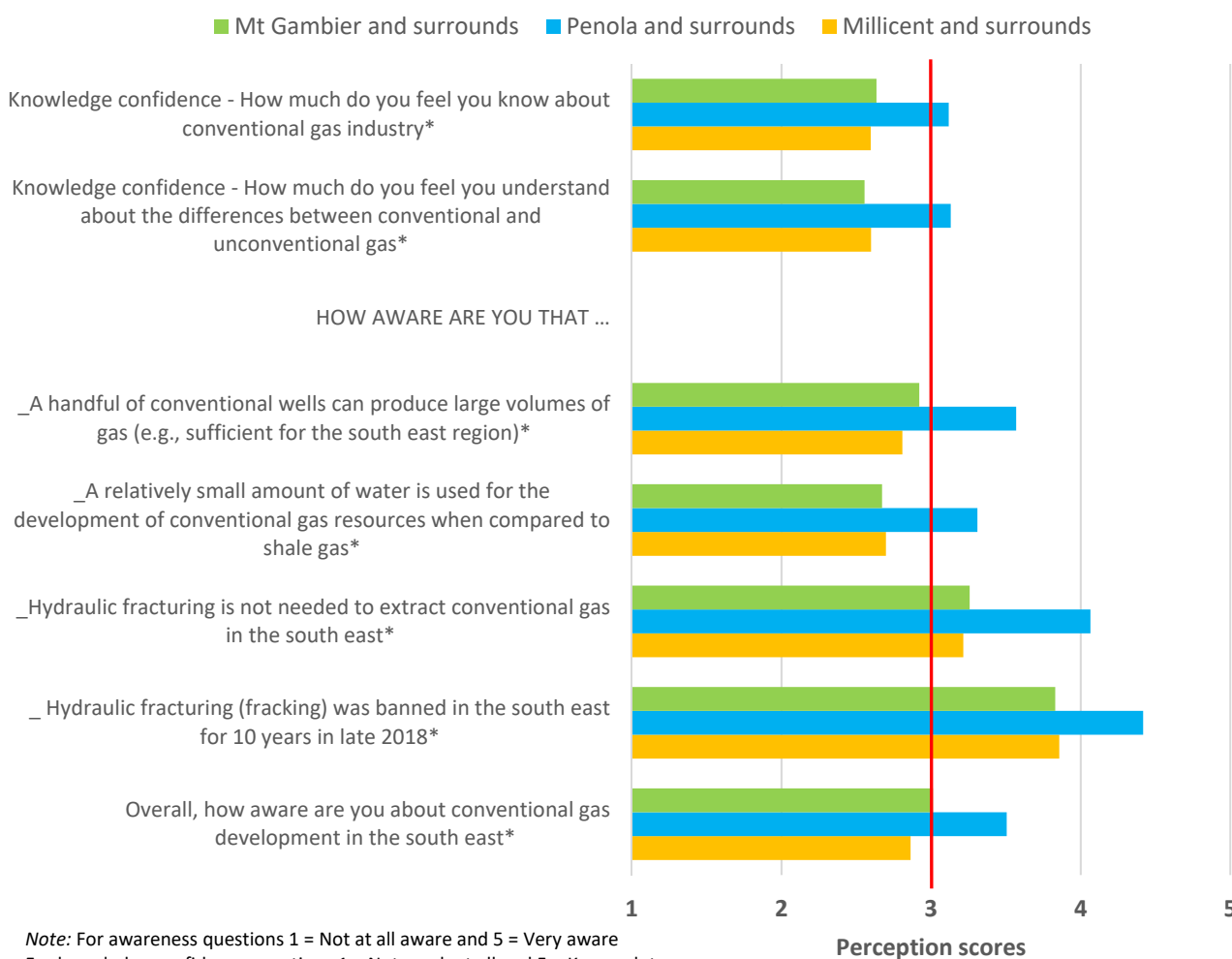


## 7.5 Knowledge and information

### 7.5.1 Knowledge confidence and awareness

Knowledge confidence and awareness was modest across the lower SE region, though statistically lower in Mt Gambier and Millicent subregions compared to Penola. People indicated they had low levels of confidence in how much they knew about the conventional gas industry and how it differs from unconventional gas such as shale and coal seam gas. Apart from Penola and surrounds, residents also had low levels of awareness and understanding of issues related to conventional gas extraction. For example, people on average were not aware that a handful of conventional gas wells can produce large volumes of gas that would be sufficient for the SE region, nor were they aware that a relatively small amount of water is used in conventional gas compared to unconventional gas. However, there was modest awareness about the lack of hydraulic fracturing in conventional gas extraction and good awareness regarding the ten-year hydraulic fracturing ban in the SE. Figure 38 shows that knowledge and awareness was statistically higher in Penola and surrounds compared to Mt Gambier and Millicent.

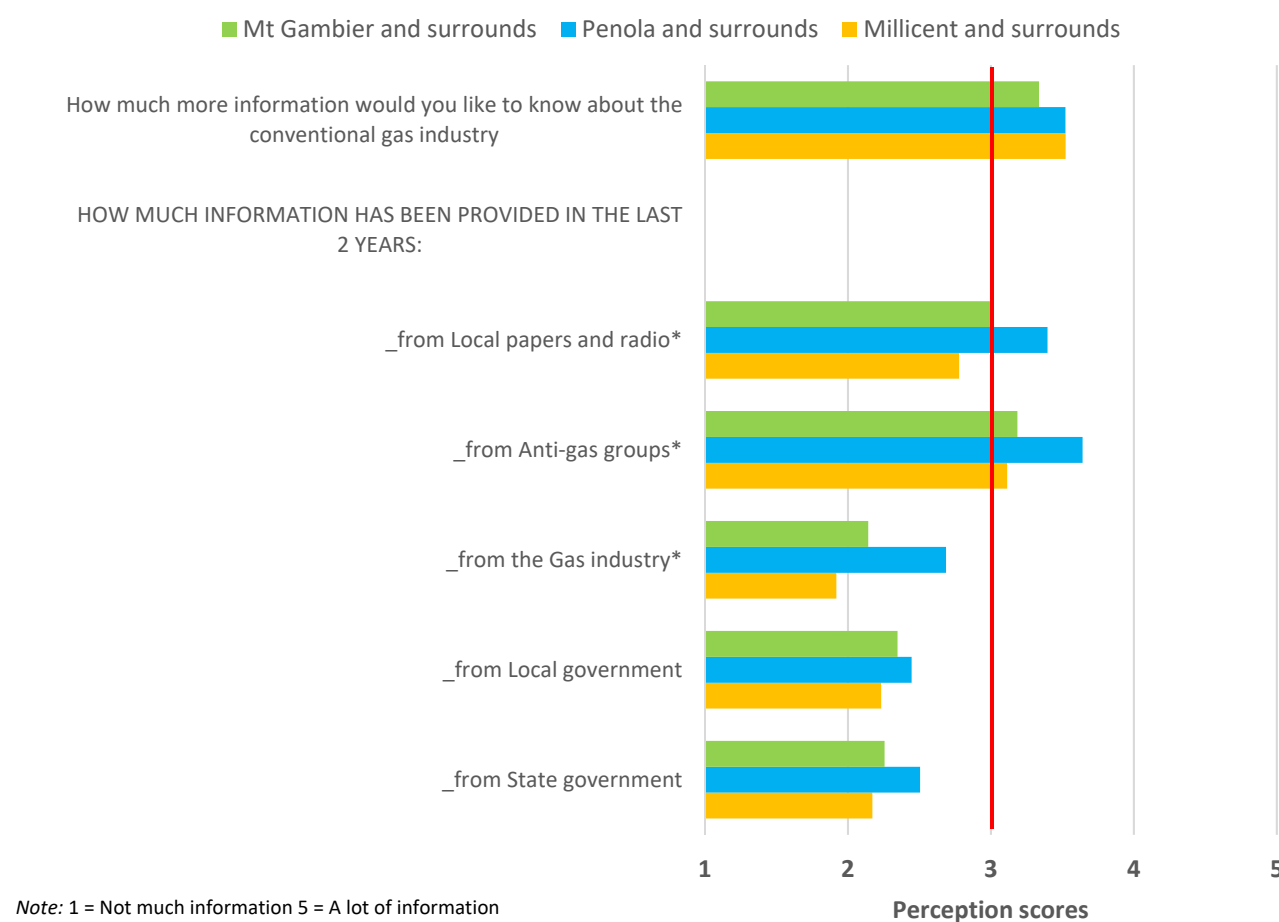
**Figure 38 Knowledge confidence and awareness levels about conventional gas in the lower SE of SA: By subregion, 2019**



## 7.5.2 Information need and information sources

Figure 39 shows that people had mostly received their information about conventional gas development from anti-gas groups and the local newspaper and radio with residents indicating they received less from state and local government. Residents had received least information from the gas industry, though this was significantly higher in Penola than the other subregions. All subregions showed that residents were interested in receiving more information about conventional gas development, including receiving information from government and industry via local papers and radio.

Figure 39 Perceptions of information need and sources in the lower SE of SA



## 7.5.3 Things that people would like to know more about

In an open-ended question, respondents were asked to describe the main information they would like about conventional gas development. Thematic analysis revealed the key topics residents would like to know more about. These are listed below in order of the most commonly requested information:

- **Potential negative effects:** Responses referred to potential negative impacts on the environment, groundwater and agriculture in the area. This was the most frequently described topic (approx. one third) and the desire for this information topic was particularly prominent

amongst those who would tolerate conventional gas development with almost half of this group wanting to know more about potential negative effects.

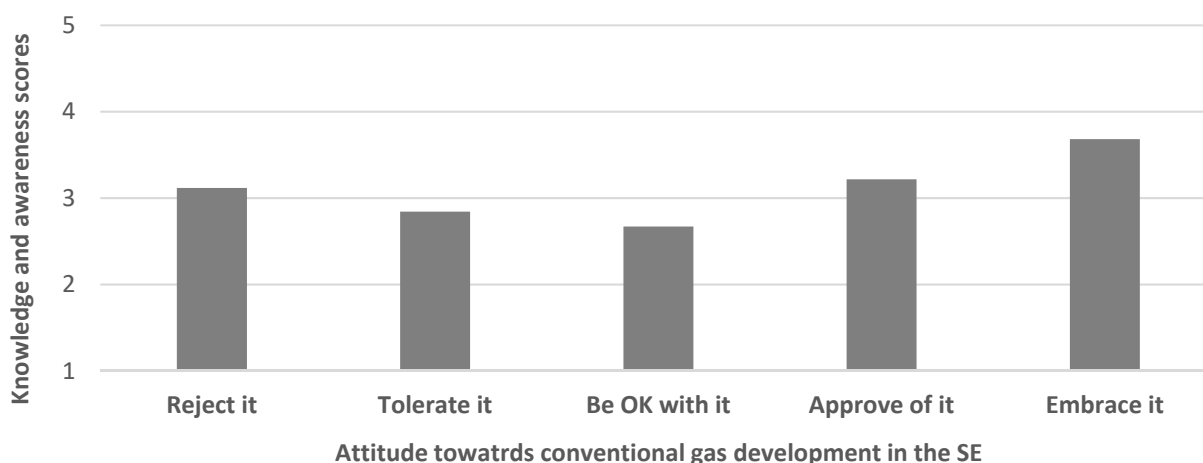
- **‘What’s happening’:** Information about what gas development may occur and the specific details about this was also a key topic. With regards to any future gas development, residents wanted to know what was going to happen, where the development would occur, how it would work and the timeframe over which it would occur. This topic was mentioned by approximately one fifth of respondents.
- **No information required or unsure:** Some residents (approx. one fifth) either didn’t want any further information or didn’t know what topics they would like to know more about.
- **Possible benefits to the community:** This topic included economic benefits, long term effects, and potential compensation for the community and landowners.
- **Transparency:** Others described a desire for openness and transparency when information was shared rather than a specific information topic.

Other information topics described infrequently included fracking, general balanced information, local gas price effects, destined gas market, gas leaks, local pipelines, industry justification and the experience of other communities with conventional gas development.

#### 7.5.4 Knowledge and overall attitude to conventional gas development

Those with strongly held attitudes for or against conventional gas development were both more confident in their knowledge about the industry than those who held more moderate views. Those who ‘approved of’ or ‘embraced’ the industry had significantly higher knowledge confidence and awareness than those that were just ‘OK with it’. Similarly, those who rejected the industry also had higher levels of industry knowledge and awareness, though still modest levels on average, as shown in Figure 40. There were no significant differences in knowledge and awareness between residents who were ‘OK with it’ or would tolerate conventional gas development in the region, both of who had low levels of industry knowledge and awareness.

Figure 40 Knowledge confidence and awareness of conventional gas development in the lower SE of SA: By overall attitude to conventional gas development





## 8 Demographic differences

The data was analysed to identify differences in findings based on demographic characteristics. Differences in perceptions of community wellbeing and local attitudes and perceptions of conventional gas development based on age, gender, and income levels were identified and are reported in this section. Differences based on whether participants lived in a town or out-of-town are also described. Differences based on subregions and farm ownership are reported in the main part of the report. All demographic and locational differences are also summarised in tables in Appendix E .

### AGE

There were no significant differences between age categories for key overall community wellbeing and overall attitudes and feelings towards conventional gas development. However, older residents (55+ years) did have significantly higher place attachment and expectations about future community wellbeing than younger residents (less than 35 years).

There were also some significant differences for several other dimensions underlying overall community wellbeing and attitudes toward conventional gas. Older residents (55+ years) in the lower SE rated their health, and services and facilities significantly higher than both younger age groups. Compared to young people they also had higher ratings for personal safety, town appearance, environmental quality, and local decision-making and trust. However, their community participation was rated significantly lower than middle aged residents. With regards to conventional gas development, older residents perceived impacts to be greater and had lower trust in governing bodies than middle aged residents, and higher knowledge confidence than young people.

### GENDER

Women in the lower SE were found to feel significantly less safe than males. They also had significantly lower perceptions of services and facilities, environmental quality, and economic opportunities. Social interaction, however, was significantly higher for women and there was no difference in overall community wellbeing.

Community attitudes and feelings toward conventional gas were significantly different between men and women, with women unfavourable towards the industry on average while men were favourable on average. Women perceived the impacts of conventional gas to be greater, while having lower perceptions of distributional fairness, and trust in gas companies, and lower confidence in their knowledge.

## **INCOME**

Overall community wellbeing was rated significantly higher by residents with household incomes over \$80,000 p.a. These residents also perceived significantly higher income sufficiency, health, economic opportunities, community participation, and social interaction than lower income residents.

With regards to community attitudes and feelings towards conventional gas, those in the highest household income bracket (\$120,000 or more) were found to be significantly more favourable towards its development than those in lower household-income brackets. They were significantly less concerned about perceived impacts and risk severity, and had higher ratings for perceptions of risk manageability. This group was also more satisfied with informal governance compared to the those with household incomes between \$80,000 and \$120,000. Those in the highest income bracket (\$120,00 or more) also had the greatest confidence in their knowledge and greatest desire for more information.

## **LIVING IN-TOWN AND OUT-OF-TOWN**

Comparing residents living in-town and out-of-town revealed significant differences for several dimensions of community wellbeing. Those living in-town were less satisfied with personal safety, health and environmental quality, while being more satisfied with town appearance and social interaction. Living in-town or out-of-town didn't have a significant bearing on attitudes toward conventional gas development. This was the case with farm owners, who mostly live out-of-town. However, as reported earlier, farmers did have significantly more knowledge about the industry than non-farm owners.

## 9 Conclusions and implications

### 9.1 Community wellbeing

#### 9.1.1 **Community wellbeing was very high across the lower SE region, particularly in Penola and surrounds**

Community wellbeing was highest in Penola, where economic opportunities were viewed considerably more favourably than the other subregions. However, community wellbeing was very high across all subregions. The relatively lower ratings regarding the suitability of the local community for teenagers (compared to suitability for seniors and children) is common in regional areas, though they were still favourable in the lower SE.

Even though there were no real differences between people who live in town and those who live out-of-town, those who own a farm indicated higher levels of community wellbeing and place attachment. Farm owners also felt there was greater economic opportunities within their communities than those who didn't own a farm.

#### 9.1.2 **All subregions felt that community wellbeing would continue to be high.**

All three subregions expected future community wellbeing to be high, though there was a higher percentage of residents in Millicent who thought it may decline over the next three years, perhaps due to concerns about economic opportunities, which were perceived to be significantly lower in this subregion. For example, Millicent have experienced ongoing job losses related to downsizing the Kimberly Clarke workforce, which is potentially contributing to people's lack of confidence about the economic future of Millicent.

#### 9.1.3 **The main drivers of community wellbeing across the region varied considerably among the subregions.**

The most important dimensions of community wellbeing across the lower SE region were: *services and facilities*, the *quality of the environment*, perceptions of *personal safety*, *income sufficiency*, and perceptions of *community trust*. These can be considered as the dimensions that contribute the most to a sense of wellbeing in the community in the lower SE region. However, there was considerable variation among the subregions suggesting that initiatives for improving or maintaining wellbeing within each of the subregions needs to be very place-based, responding to the aspects of community life that each subregion views as important.

Services and facilities were a particularly important drivers of community wellbeing for Penola and surrounds, and community spirit was more important for enhancing community wellbeing in the more rural subregions of Penola and Millicent compared to Mt Gambier. In contrast, having sufficient income was more important for Mount Gambier for a sense of community wellbeing. Income sufficiency was also important for Millicent but less so in Penola. The perceived

importance of each dimension in combination with how favourably it is currently rated by local residents helps decision makers to prioritise scarce resources for improving or maintaining community wellbeing.

## 9.2 Attitudes and perceptions of conventional gas development in the SE of South Australia

### 9.2.1 Across the lower SE region, there were a range of views towards conventional gas development with most people indicating they would tolerate or be OK with conventional gas development in the region

Perceptions differed among the subregions with Penola tending to be more polarised than Mt Gambier and Millicent in their views. This means that fewer people in Penola held a middle-ground view about gas development. This was found among both farm owners and non-farm owners in Penola and surrounds.

Two-thirds of residents in the lower SE region didn't think that they would be personally impacted by conventional gas development, either positively or negatively. However, approximately 30% of residents in Penola and surrounds felt they would be personally and negatively impacted.

Interestingly, residents in the lower SE perceived others in their local communities to be less accepting of conventional gas development than they themselves were (on average). This highlights the importance of representative surveys in capturing a more accurate understanding of what a region thinks about conventional gas development.

### 9.2.2 Attitudes and perceptions differed based on gender and income and need to be factored into communication and engagement planning

Men were more positive about conventional gas development. Women were more concerned about impacts, less trusting of gas companies, and viewed the risks associated with gas as less able to be managed. They also reported less confidence in their knowledge about gas. Moreover, women were negative on average in their attitudes while men were positive on average in their attitudes. This gender difference is not uncommon in relation to the resources sector (Measham & Zhang, 2019).

Those with higher incomes were also more positive about conventional gas. They had lower concerns and lower perceptions of risk severity, as well as more confidence in their knowledge about conventional gas development.

This suggests that when engaging with the community it is important for gas companies and government to ensure there is diversity in the representation from communities. For example, issues and problems raised by men may differ from how they are perceived by women. Similarly, ensuring that a diversity of income levels are included in engagement when understanding community expectations and concerns is also important. Thus, even though gas companies and governments may plan their communications and engagement around segments of stakeholders such as farmers, the business community, and local council, it is also important to ensure there is



diversity within these segments in terms of socioeconomic characteristics such as gender and income.

### **9.2.3 Knowledge and understanding of the industry shaped people's concerns about impacts and risk manageability, which in turn influenced acceptance**

Residents in the lower SE did not believe on average that the risks associated with conventional gas development were at this stage manageable, and most residents wanted to know more information about conventional gas development in the region. However, it is important that information addresses the issues that people care about so that they can assess what conventional gas development would mean for them and their community. When providing information, residents find local papers and radio the most popular sources of information about local conventional gas development.

Those with more moderate views about conventional gas development were less confident in their knowledge of the industry, while those with strong view either for or against gas development were more confident in their existing industry knowledge. This suggests there is opportunity to present new information to residents with more moderate attitudes to conventional gas development in the SE region.

### **9.2.4 People were more concerned about possible long-term future issues of conventional gas development than they were about more immediate impacts**

The most concerning issues were fracking being introduced after the moratorium and unconventional gas development being introduced over time, both issues of higher concern than possible impacts to water. This suggests that many residents feel that conventional gas development may be a 'foot in the door' for a transition to unconventional gas development over the long-term horizon. This may also reflect relative low levels of trust in the gas industry and state government. Together these dampen acceptance for conventional gas development in the lower SE region.

### **9.2.5 Conveying the benefits of a conventional gas industry beyond providing direct local jobs is important**

Local communities did not perceive the benefits of conventional gas development to be high. This applies to both local and wider benefits that the industry may bring to the region or to society. Yet perceptions of benefits were important drivers of acceptance particularly for people in Penola and Millicent subregions.

Understanding the extent of possible benefits and how benefits from the conventional gas industry would be distributed to the region would be useful to residents. Communicating the broader societal benefits on conventional gas and the role it has to play in the state's energy mix would also help residents who are tolerating the idea of conventional gas to be more positive about its development in the region.

Economic issues are important to the wellbeing of these community's and currently rated unfavourably. Understanding how benefits can indirectly flow to the region through maintaining

viability of big gas users or attracting new manufacturing plants to the region because of a more secure gas supply would resonate with local residents, particularly around Mt Gambier and Millicent where economic outlooks are less than positive. At this stage, people are not convinced that conventional gas development would result in cheaper or more reliable gas nor that it would necessarily be of benefit to large gas users.

It is also important to be accurate in communicating potential benefits as overselling benefits can undermine trust in industry and government. Incorrect forecasting can likewise facilitate poor decision making for local businesses who may overinvest and plan for business conditions that don't eventuate, if benefits are overstated.

### **9.2.6 Addressing people's fears of wide-spread future gas development is important for people to feel more positive about conventional gas**

The scale of any future conventional gas development would be important to outline to residents, including possible scenarios or ways that the industry may unfold in the region. This would help address some people's concerns about gas development expanding into large numbers of wells in the future. This is particularly pertinent when people indicated in the survey they have low levels of understanding regarding the differences between conventional and unconventional gas development and potentially imagine a future of hundreds of wells typical of unconventional gas extraction that they see in Queensland. Presenting likely numbers of and areas for wells would make the imaginings of a future conventional gas industry for the SE region more tangible and potentially less concerning for many people.

### **9.2.7 Good governance is key to shaping trust in the conventional gas industry**

Good governance can improve relationships between the community, state government departments and agencies, and the gas industry, as well as mitigating impacts and improving benefits. Along with implementing good governance processes and being genuinely open to community input, communicating to local residents how governance processes will be undertaken and how communities can have a say and be involved is important. Research has shown that communicating early with this type of information can have wide ranging and beneficial effects including improving community perceptions of impacts, benefits, distributional fairness, and the conventional gas sector more generally (Zhang, Measham, and Moffat, 2018).

### **9.2.8 Distributional fairness was important to acceptance, and benefits were much larger drivers of this sense of fairness than impacts**

This means when people weigh up the pros and cons to decide how fair it is to have conventional gas development in the region, benefits are key to this evaluation. While a sense of distributional fairness is related to perceived impacts and benefits, it is also important in its own right for enhancing social acceptance of conventional gas development in the lower SE region. Since perceived benefits are the main driver of a sense of distributional fairness, any infrastructure, services and facilities funding by the Royalties for Regions program would be a good vehicle for enhancing a sense of distributional fairness in the region, particularly if royalties associated with the conventional gas industry could be identified.

However, it is still important to note that perceived impacts are the main direct driver of social acceptance or lack thereof. Concerns about conventional gas development in the region still need to be alleviated, including addressing people's concerns about possible risks and how risks could be effectively managed.

## Appendix A Background information provided for survey questions relating to conventional gas development

Moving on to community attitudes about conventional gas development in the region, please consider this information:

- Presently, there are four potential wells around the Penola area (Haselgrove-3, Haselgrove-4, Nangwarry-1 and Dombey-1) with Haselgrove-3 close to producing gas
- Exploring for these wells was supported by grants from the state government which requires that any gas first be offered to electricity generators, industry and retail gas users in South Australia.
- Conventional gas wells do not need fracking and there is a 10 year moratorium on fracking in the region until November 2028

Now, please answer the following questions with this background information in mind.

Note: This background information was also made available for telephone operators to re-read to respondents if they need reminding later

## Appendix B Measures and reliability of scales

Separate scales were developed for the various measures associated with community wellbeing and perceptions of onshore conventional gas development, and the sector, by averaging the items within the respective scale. All multi-item measures were tested for ‘internal consistency’ or reliability. As shown in Table 8, the reliability of all multi-item measures (scales) usually exceeded .80. Reliability over .90 is considered very good, over .80 is considered good, and .70 considered adequate for scale development.

**Table 8 Measures and reliability of scales used in survey**

Measures of community wellbeing	No. of items	Scale type / reliability <sup>1</sup>	Survey items
Personal safety	3	Agreement .76	It is safe to be alone at home during the night; to walk alone outside at night; overall feel safe living in the area
Income sufficiency	3	Agreement .92	Your income is enough for household expenses; for the lifestyle you enjoy; overall satisfied income covers living expenses
Health	5	Satisfaction .81	With diet and eating habits; exercise habits; physical health; mental health; overall satisfaction with health and wellbeing
Services and facilities	7	Satisfaction ..79	With local schools; child care facilities; sports and leisure facilities; shopping (other than for food and everyday items); medical and health services; community support services; overall satisfaction with services and facilities
Town appearance	3	Satisfaction .85	With cleanliness in the town; greenery and parks in the town; overall satisfaction with general appearance of the town
Roads	4	Satisfaction .85	With condition; safety; amount of traffic on roads; roads overall
Environmental quality	5	Satisfaction .79	With level of dust; noise; quality of the air; drinking water; overall quality of the general environment
Environmental management	3	Satisfaction .80	With quality of underground water for the future; management of parks, caves, and reserves for the future; overall management of the natural environment for the future
Local decision making and trust	6	Agreement .92	See items for sub-scales:
- Local decision making	3	Agreement .86	Local council informs residents; opportunities to be heard; overall satisfied with how decisions are made for the community
- Trust in local leaders	3	Agreement .93	Your local council can be trusted; there are local leaders I can trust; Overall, I trust my local leaders
Economic opportunities	4	Agreement .91	There are good job opportunities; there is good job security for locals; local businesses are doing well; overall satisfied with employment and business opportunities
Community spirit	3	Agreement .90	People can rely upon one another for help; people have friendly relationships; overall there is good community spirit around here
Community cohesion	3	Agreement .88	Community is welcoming of newcomers; and people of different cultures; overall community includes everyone no matter who they are
Community trust	2	Agreement .88	People that you see around [local area] can generally; overall satisfied with levels of trust in local area

Community participation	3	Agreement .89	Involved in a local organisation or club; attended several community events in the past year; overall participate regularly in community activities
Social interaction	4	Agreement .82	Regularly visit someone's home; go out together socially; speak or text on phone; overall satisfied with level of social interaction in local area
Overall community wellbeing	5	Agreement .88	Community is suitable for young children; teenagers; seniors; overall, local area offers a good quality of life; overall, happy living in local area
Expected future wellbeing	2	Agreement .87	In 3 years time, I will be happy living in this local area; it will offer a good quality of life
Place attachment	4	Agreement .89	Feel that I belong to this area; pleased to come back to the area if I go away; I feel proud to living in this community;

Notes: <sup>1</sup> The Spearman-Brown Rho correlation was used for two item measures and Cronbach's alpha for other measures

Table 8 continued

Measures for perceptions and attitudes about conventional gas	No. of items	Scale type / reliability <sup>1</sup>	Examples for scale items
Perceived impacts	18	Concern .97	See items for sub-scales:
- More immediate issues	13	Concern .96	Damage to underground aquifers; depletion of underground water; dust, noise, light pollution; a threat to 'clean' and 'green' brand; threat to rural liveability; reduces region's visual attractiveness; impact on farm property values; increased traffic; community division; health impacts
- Possible future issues	5	Concern .90	Fracking being introduced after the moratorium; unconventional gas being introduced over time, conventional gas development extending into other farming areas; well integrity over time
Risk manageability	3	Agreement .50	Risks are understood by science; are understood by the community; are manageable
Risk severity	3	Agreement .89	Risks potentially uncontrollable; potentially disastrous; can adversely affect future generations
Perceived benefits	15	Agreement .96	See items for sub-scales:
- Local benefits	8	Agreement .93	Local employment; local business opportunities; opportunities for young people to stay in region; corporate support for local community activities; additional services and facilities; cheaper gas for local industries; cheaper gas for residents
- Regional and societal benefits	7	Agreement .93	Improving energy security in the region; supporting the viability of big gas users; make the region more attractive to new businesses and industry; boosting the wider state economy; role in transitioning to renewable energy; role in SA future energy mix
Distributional fairness	4	Agreement .91	Fair to have conventional gas development in the region if your local council compensated accordingly; your community received a fair share of the benefits; if farmers compensated fairly; if good arguments for having it in this region
Procedural fairness	3	Agreement .92	Conventional gas companies would listen to and respect community opinions; inform residents of important developments; give opportunities for communities to participate in decision making
Relationship quality	4	Agreement .94	Conventional gas companies would be accessible or easy to contact; open, honest and transparent; engage in genuine two-way dialogue; respond to issues in a timely manner
Governance overall	9	Agreement .94	See items for sub-scales:

- Formal governance	2	Agreement .85	Legislation and regulation could be counted on to ensure companies did the right thing; The EPA would be able to hold companies accountable for any breaches
- Engaging communities	4	Agreement .87	The local council would listen to and advocate for local communities on about gas development; the EPA would listen to and respond to community concerns; and inform local communities of any issues with gas development as they arise.
- Working collaboratively	5	Agreement .94	Government, communities, and gas companies can work together to address problems; to make opportunities; share information, resources and learnings; proactively plan for future changes; manage any changes effectively
- Trust in state departments	3	Extent of trust .94	Trust state governing bodies overseeing conventional gas development to act responsibly; in local community's best interest's; trust their capability
Trust in gas company	3	Extent of trust .93	Trust gas companies to act responsibly; in local community's best interest's; trust their capability
Community attitudes and feelings toward CG	6	Agreement .92	Attitude: reject, tolerate, accept, approve, embrace it (categoric); acceptance of conventional gas development Feelings: pleased; optimistic; angry; worried
Community adapting to CG development	1	Agreement n.a.	Local area and surrounds would adapt to conventional gas activities; how local area would deal with conventional gas: resist, note cope, only just cope, adapt to the changes, change into something different but better (categoric)
Knowledge	7	Level .88	How much do you feel you know about the conventional gas industry; how aware are you that hydraulic fracturing is not needed to extract conventional gas; a relatively small amount of water is used; about the differences between conventional and unconventional gas
Need for more information	1	Level n.a.	How much more information do you feel you need about conventional gas development in the region
Knowledge sources	5	Frequency .79	Information provision about conventional gas development in the south east by state and local government; the gas industry; anti-CSG groups; local papers and radio

Notes: <sup>1</sup> The Spearman-Brown Rho correlation was used for two item measures and Cronbach's alpha for other measures; CG = conventional gas

## Appendix C Statistical analyses

### Dominance analysis

Dominance analysis was used to determine the relative importance of various dimensions of community wellbeing in predicting overall community wellbeing. General dominance statistics were used because they are the most commonly used and easiest to interpret.

We reported the standardised versions of these statistics which calculates the percentage of the explained variation in overall community wellbeing which can be attributed to each dimension, adding up to 100% across all predictors. It does this by calculating the incremental contribution to R-squared across all models in which the independent variable is included. This involved running regressions for each possible combination of the CWB.

### Path analysis

Path analysis was used to model the social acceptance of conventional gas development and its underlying drivers. The main advantage of path analysis over multiple regression analysis is that it can model a range of direct and indirect paths or influences on the main dependent variable or social acceptance in this case (McCrea, 2014). Direct paths are factors that lead directly to social acceptance. Indirect paths lead to social acceptance via mediating or intervening factors, and some factors have both direct and indirect paths to social acceptance.

The path models show the percentage of variation explained in each dependent variable and the standardised regression coefficients for each path predictor of that variable, giving an indication of the relative importance of each. Path analysis can also test how well the models fit the data. That is, how well the correlations implied in the path model fit the actual correlations in the data (McCrea, 2014). The path analyses in this report had good model fit (i.e., standardized root mean squared residual of less than .05).



# Appendix D All survey items by Subregion

## Survey item statistics by subregion

Survey item	Millicent and surrounds	Penola and surrounds	Mount Gambier and surrounds	Total
<b>COMMUNITY WELLBEING</b>				
Place attachment – Thinking about [local area] and surrounds, how much do you agree with the following statements:				
I feel that I belong to this area	4.29	4.25	4.35	4.33
I am pleased to come back to the area, if I go away	4.52	4.55	4.47	4.48
I feel proud to live in this community	4.45	4.57	4.42	4.44
Overall, I feel very attached to this local area	4.40	4.47	4.37	4.38
Personal safety – Now a few questions about personal safety. On a scale from 1 to 5, how much do you agree that:				
It is safe to be alone at home during the night	4.48 <sup>L</sup>	4.76 <sup>H</sup>	4.41 <sup>L</sup>	4.46
It is safe to walk alone outside at night	3.79 <sup>M</sup>	4.48 <sup>H</sup>	3.57 <sup>L</sup>	3.70
Overall, I feel safe living in the area	4.45 <sup>L</sup>	4.79 <sup>H</sup>	4.49 <sup>L</sup>	4.51
Income sufficiency - Thinking about your household income, how much do you agree that:				
Your income is enough for household expenses	3.88 <sup>L</sup>	4.16 <sup>H</sup>	3.73 <sup>L</sup>	3.79
Your income is enough for the lifestyle you enjoy	3.76	4.00 <sup>H</sup>	3.62 <sup>L</sup>	3.68
Overall, you are satisfied that your income covers living expenses	3.94	4.14	3.82	3.87
Health – Now on a scale from 1 = very dissatisfied to 5 = very satisfied and thinking about your health and wellbeing, how satisfied are you with				
Your diet and eating habits	3.76 <sup>L</sup>	4.12 <sup>H</sup>	3.82 <sup>L</sup>	3.84
Your exercise habits	3.33 <sup>L</sup>	3.66 <sup>H</sup>	3.19 <sup>L</sup>	3.26
Your physical health	3.59 <sup>L</sup>	3.94 <sup>H</sup>	3.74	3.73
Your mental health	4.14	4.33 <sup>H</sup>	4.03 <sup>L</sup>	4.08
Overall, how satisfied are you with your health and wellbeing	3.89	4.09	3.98	3.98
Services and facilities - Thinking of services and facilities for [local area] and surrounds, how satisfied are you with:				
Local schools	3.66 <sup>L</sup>	3.95 <sup>H</sup>	3.71 <sup>L</sup>	3.72
Childcare facilities	3.54	3.70	3.50	3.53
Sports and leisure facilities	4.09 <sup>H</sup>	3.87	3.88 <sup>L</sup>	3.91
Shopping (other than food and everyday items)	3.17 <sup>L</sup>	3.51 <sup>H</sup>	3.52 <sup>H</sup>	3.46
Medical and health services	3.38	3.10	3.25	3.26
Community support services (e.g. meals on wheels, youth workers)	3.61 <sup>H</sup>	3.29 <sup>L</sup>	3.57	3.55
Overall, how satisfied are you with the services and facilities in your local area	3.67	3.59	3.70	3.68
Town appearance - Thinking about [local area]'s general appearance, how satisfied are you with:				
Cleanliness in the town	4.14	4.33	4.21	4.21
Greenery and Parks in the town	4.34	4.38	4.42	4.40

Survey item	Millicent and surrounds	Penola and surrounds	Mount Gambier and surrounds	Total
Overall, how satisfied are you with the general appearance of the town	4.11	4.30	4.26	4.24
Roads - Thinking about the roads outside of [local area], how satisfied are you with the				
Condition of the roads	<b>2.58</b> <sup>L</sup>	<b>2.88</b> <sup>L</sup>	<b>2.92</b> <sup>H</sup>	2.86
Safety on the roads	2.93	3.09	3.08	3.06
Amount of traffic on roads	3.48	3.32	3.57	3.53
Roads overall	<b>2.82</b> <sup>L</sup>	<b>3.01</b>	<b>3.19</b> <sup>H</sup>	3.11
Environmental quality - Thinking about pollution in the general environment, how satisfied are you with the				
Level of dust	3.94	3.94	3.83	3.86
Level of noise	<b>4.32</b> <sup>H</sup>	<b>4.22</b>	<b>4.02</b> <sup>L</sup>	4.09
Quality of the air	<b>4.43</b> <sup>H</sup>	<b>4.50</b> <sup>H</sup>	<b>4.04</b> <sup>L</sup>	4.15
Quality of drinking water	<b>3.92</b> <sup>M</sup>	<b>4.12</b> <sup>H</sup>	<b>3.65</b> <sup>L</sup>	3.74
Overall quality of the general environment around [local area]	<b>4.22</b> <sup>L</sup>	<b>4.41</b> <sup>H</sup>	<b>4.16</b> <sup>L</sup>	4.20
Environmental management - Now thinking about the <u>natural</u> environment around [local area], how satisfied are you with the management of the				
Underground water for the future	<b>3.34</b> <sup>H</sup>	<b>3.03</b> <sup>L</sup>	<b>3.33</b> <sup>H</sup>	3.30
Management of parks, caves and reserves for the future	3.96	3.79	4.01	3.98
Overall, the management of the natural environment for the future	3.59	3.54	3.70	3.67
Local decision making - Thinking about how decisions are made affecting [local area] and surrounds, how much do you agree that:				
The local council informs residents of important developments	<b>3.38</b> <sup>H</sup>	<b>3.03</b> <sup>L</sup>	<b>3.25</b>	3.25
There are opportunities for your voice to be heard on issues that are important to you	3.39	3.15	3.36	3.34
Overall, I am satisfied with how decisions are made that affect [local area]	<b>3.40</b> <sup>H</sup>	<b>3.06</b> <sup>L</sup>	<b>3.22</b> <sup>L</sup>	3.23
Trust in local leaders - Thinking about trust in local leaders, how much do you agree that:				
Your local council can be trusted	<b>3.56</b> <sup>H</sup>	<b>3.08</b> <sup>L</sup>	<b>3.11</b> <sup>L</sup>	3.18
There are local community leaders I can trust	<b>3.75</b> <sup>H</sup>	<b>3.58</b>	<b>3.44</b> <sup>L</sup>	3.50
Overall, I trust my local leaders	<b>3.63</b> <sup>H</sup>	<b>3.53</b>	<b>3.33</b> <sup>L</sup>	3.40
Economic opportunities - Regarding employment and business opportunities in [local area] and surrounds, how much do you agree that:				
There are good job opportunities	<b>2.56</b> <sup>L</sup>	<b>3.36</b> <sup>H</sup>	<b>2.95</b> <sup>M</sup>	2.92
There is good job security for locals	<b>2.69</b> <sup>L</sup>	<b>3.57</b> <sup>H</sup>	<b>3.10</b> <sup>M</sup>	3.08
Local businesses are doing well	<b>2.71</b> <sup>L</sup>	<b>3.47</b> <sup>H</sup>	<b>2.82</b> <sup>L</sup>	2.86
Overall, I am satisfied with employment and business opportunities in my local area	<b>2.76</b> <sup>L</sup>	<b>3.38</b> <sup>H</sup>	<b>3.01</b> <sup>M</sup>	3.00
Community spirit - Thinking about community spirit in [local area] and surrounds, how much do you agree that				
People can rely upon one another for help	<b>3.85</b> <sup>L</sup>	<b>4.35</b> <sup>H</sup>	<b>3.74</b> <sup>L</sup>	3.81
People have friendly relationships	<b>4.07</b> <sup>L</sup>	<b>4.43</b> <sup>H</sup>	<b>3.91</b> <sup>L</sup>	3.99
Overall, there is good community spirit around here	<b>4.11</b> <sup>M</sup>	<b>4.48</b> <sup>H</sup>	<b>3.92</b> <sup>L</sup>	4.01

Survey item	Millicent and surrounds	Penola and surrounds	Mount Gambier and surrounds	Total
Community cohesion - Thinking about how inclusive your local community is in [local area] and surrounds, how much do you agree that:				
Your community is welcoming of newcomers	3.79	3.94 <sup>H</sup>	3.66 <sup>L</sup>	3.71
Your local community is welcoming of people of different cultures	3.70	3.77	3.64	3.66
Overall, your community includes everyone no matter who they are	3.79	3.89	3.69	3.72
Community trust - Thinking about levels of trust in your local area, how much do you agree that:				
People that you see around [local area] can generally be trusted	3.55 <sup>L</sup>	3.80 <sup>H</sup>	3.43 <sup>L</sup>	3.49
Overall, I am satisfied with levels of trust in my local area	3.63 <sup>L</sup>	3.92 <sup>H</sup>	3.59 <sup>L</sup>	3.63
Community participation - Thinking about everyday interactions with people, other than those you may live with. How much do you agree that you do the following regularly				
You are involved in a local organisation or club	3.36	3.56	3.60	3.56
You have attended several community events in the past year	3.46	3.82	3.56	3.57
Overall, you participate regularly in a variety of community activities	3.13 <sup>L</sup>	3.63 <sup>H</sup>	3.35	3.34
Social interaction - Thinking about everyday interactions with people, other than those you may live with. How much do you agree that you do the following regularly				
Visit someone's home	3.54	3.77	3.48	3.51
Go out together socially	3.45	3.66	3.35	3.40
Speak or text on the phone	3.96	4.14	4.00	4.01
Overall, I have regular social interaction with others in my local area	3.97	4.21	4.03	4.03
Overall community wellbeing - Thinking about overall community wellbeing around [local area] and surrounds, how much do you agree that:				
This community is suitable for young children	4.21 <sup>L</sup>	4.50 <sup>H</sup>	4.07 <sup>L</sup>	4.14
This community is suitable for teenagers	3.55	3.67	3.52	3.54
This community is suitable for seniors	4.30	4.29	4.26	4.27
Overall, this local area offers a good quality of life	4.31 <sup>L</sup>	4.54 <sup>H</sup>	4.28 <sup>L</sup>	4.31
Overall, I am happy living in this local area	4.46	4.58 <sup>H</sup>	4.35 <sup>L</sup>	4.39
This community is a great place to live	4.37 <sup>L</sup>	4.58 <sup>H</sup>	4.30 <sup>L</sup>	4.34
EXPECTED FUTURE COMMUNITY WELLBEING				
Imagining what it might be like in 3 years time, how much do you agree that:				
Overall, I will be happy living in this local area	4.13	4.28	4.11	4.13
Overall, this local area will offer a good quality of life	4.18	4.35	4.15	4.17
Community wellbeing over next 3 years	2.01	2.15	2.12	2.10
CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES				
Perceived impacts - In relation to conventional gas development, how much of a concern do you believe the following may be:				
Depletion of underground water	3.54	3.59	3.45	3.48
Damage to the underground aquifers	3.72	3.78	3.63	3.65

Survey item	Millicent and surrounds	Penola and surrounds	Mount Gambier and surrounds	Total
A threat to clean and green brand for regional agriculture	3.63	3.60	3.52	3.54
A threat to regional tourism	3.13	3.17	2.96	3.01
Air contamination	3.17	3.10	2.98	3.03
Dust, noise, and light pollution	3.00	2.77	2.85	2.87
Increased traffic on the roads	3.05	2.95	2.86	2.90
Health impacts	<b>3.27<sup>H</sup></b>	<b>2.85<sup>L</sup></b>	<b>3.15</b>	3.14
Threat to rural liveability	3.31	3.15	3.16	3.19
Reduces the regions visual attractiveness	3.18	3.02	3.01	3.04
Impact on farm property values	3.57	3.36	3.46	3.47
Community division over gas development	3.85	3.68	3.65	3.69
Overall, how much of a concern, do you believe, comes with conventional gas development in the region	3.52	3.43	3.42	3.44

Potential impacts: Thinking about possible future issues, how much of a concern to you believe the following may be:

Conventional gas development extending into other farming areas in the South East	<b>3.73<sup>H</sup></b>	<b>3.30<sup>L</sup></b>	<b>3.54</b>	3.55
Integrity of gas wells over time (e.g. leaks)	3.85	3.62	3.70	3.72
Unconventional gas development being introduced over time (e.g., tight or shale gas)	<b>4.06<sup>H</sup></b>	<b>4.12<sup>H</sup></b>	<b>3.77<sup>L</sup></b>	3.85
Fracking being introduced after the moratorium	4.45	4.28	4.25	4.29
Overall how much of a concern, do you believe, there may be in the future with gas development	4.04	3.87	3.86	3.89

Risks - How much do you agree that any risks associated with conventional gas development:

Are understood by science	3.41	3.19	3.30	3.31
Are understood by the community	<b>2.98<sup>H</sup></b>	<b>2.84</b>	<b>2.67<sup>L</sup></b>	2.74
Are manageable	3.11	3.04	3.02	3.03
Have potentially uncontrollable impacts	3.56	3.65	3.47	3.50
Can adversely affect future generations	3.92	3.81	3.72	3.76
Are potentially disastrous	3.75	3.71	3.51	3.57

Perceived local benefits - How much do you agree that conventional gas development would provide significant local benefits such as

Local employment	3.30 <sup>H</sup>	2.81 <sup>L</sup>	3.28 <sup>H</sup>	3.24
Opportunities for young people to stay in the region	3.14 <sup>H</sup>	2.66 <sup>L</sup>	3.02 <sup>H</sup>	3.01
Local business opportunities	3.11	2.87	3.02	3.02
Corporate support for local community activities (e.g. a gas company sponsoring local clubs)	3.34	3.54	3.23	3.27
Additional local services and facilities	3.11	2.95	2.94	2.97
Cheaper gas for local industries	2.96	2.63	2.78	2.79
Cheaper gas for local residents	2.78	2.44	2.67	2.67
Overall, how much do you agree that conventional gas development would bring significant benefits to the local community	2.93	2.75	2.92	2.90

Perceived societal benefits - How much do you agree that conventional gas development in the region has a role in:

Survey item	Millicent and surrounds	Penola and surrounds	Mount Gambier and surrounds	Total
Improving energy security in the region	3.01	2.95	3.04	3.03
Supporting the viability of big gas users in the region (e.g., manufacturers)	3.30	3.09	3.18	3.19
Making the region more attractive to new business and industry	3.14	2.87	3.10	3.08
The future energy mix for South Australia	3.33	3.34	3.21	3.25
Transitioning to renewable energy sources	3.08	2.98	2.91	2.94
Boosts the wider state economy	3.36	3.25	3.29	3.30
Overall, conventional gas development would provide significant benefits for the wider region and society	3.15	3.12	3.12	3.13
Distributional fairness - How much do you agree that it would be fair to have conventional gas development in the region?				
If your local council were compensated accordingly	3.05	2.84	2.99	2.99
If your community received a fair share of the benefits	3.43	3.21	3.37	3.36
If nearby farmers were compensated fairly	3.55	3.43	3.48	3.49
If there were good arguments for having conventional gas development in this region	3.35	3.28	3.36	3.35
Procedural fairness - Thinking about how decisions might be made about this conventional gas development, how much do you agree that gas companies				
Would listen to and respect the community's opinions	2.22	2.38	2.43	2.39
Would inform residents of important developments	2.53	2.71	2.62	2.61
Would give local communities opportunities to be involved in decision making	2.24	2.19	2.40	2.35
Relationship quality - How confident are you that gas companies would				
Respond to concerns and issues in a timely manner	2.47	2.50	2.47	2.48
Be accessible or easy to contact	2.37	2.68	2.42	2.44
Be open, honest and transparent	2.16	2.33	2.30	2.28
Engage in genuine two way dialogue	2.23	2.51	2.37	2.36
Trust in gas companies - How confident are you that gas companies would				
Trust them to act in the local community's best interests	<b>2.20<sup>L</sup></b>	<b>2.57<sup>H</sup></b>	<b>2.35</b>	2.35
Trust them to act responsibly	2.46	2.77	2.61	2.60
Trust their capability	2.74	3.03	2.85	2.85
Formal governance - Thinking about how conventional gas development would be governed, how much do you agree that:				
Legislation and regulation could be counted upon to ensure that companies did the right thing	2.81	2.68	2.94	2.89
The Environment Protection Authority (EPA) would be able to hold companies accountable for any breaches	3.23	2.98	3.16	3.15
Engaging community - Thinking about other government responses to conventional gas development, how much do you agree that				
The local council would listen to and advocate for local communities on issues about gas development	3.24	2.98	3.20	3.19

Survey item	Millicent and surrounds	Penola and surrounds	Mount Gambier and surrounds	Total
The EPA would inform the local community of any issues with gas development as they arise	3.20	3.03	3.12	3.12
The EPA would listen to and respond to any community concerns	3.14	3.14	3.16	3.16
State government would listen to and respond to any community concerns	2.65	2.52	2.52	2.54
Trust in gas governing bodies - Thinking about state government departments involved in overseeing conventional gas development, such as the Department for Energy and Mining, to what extent would you				
Trust them to act in the local community's best interests	2.47	2.50	2.39	2.41
Trust them to act responsibly	2.69	2.64	2.63	2.64
Trust their capability	2.72	2.68	2.63	2.65
Working collaboratively - How much do you agree that communities, gas companies, local councils and state government would be able to work together				
To address any problems with conventional gas development	2.70	2.85	2.72	2.73
To maximise any benefits associated with gas development	2.85	2.89	2.78	2.80
To share information, resources, and learnings	2.78	3.00	2.70	2.74
To proactively plan for future changes	2.84	2.94	2.84	2.85
Overall, the region together would be able to manage any changes effectively	2.86	3.00	2.90	2.90
<b>COMMUNITY ACCEPTANCE</b>				
Acceptance of conventional gas - Thinking about conventional gas development in the region, overall how accepting are you?				
Level acceptance of conventional gas development in region	2.96	2.89	3.00	2.98
Attitude to conventional gas - Overall, which best describes your attitude toward conventional gas development in the South East region. I would				
Reject it	20.4%	25.9%	21.7%	21.9%
Tolerate it	38.9%	27.8%	25.4%	27.8%
Be OK with it	17.7%	9.7%	24.1%	21.7%
Approve of it	12.9%	21.2%	14.8%	15.1%
Embrace it	10.1%	15.4%	14.0%	13.5%
Feelings toward conventional gas - Thinking about conventional gas development in the region, how much do you agree you feel				
Pleased	2.84	2.83	2.88	2.87
Optimistic	2.80	2.73	2.91	2.88
Angry	2.36	2.27	2.34	2.34
Worried	2.95	3.06	2.82	2.86
Personal impact - Which best describe how you would be impacted by this development personally				
Negatively impacted	18.8%	30.2%	18.3%	19.5%
Positively impacted	15.6%	13.6%	13.2%	13.6%
Not really impacted	65.6%	56.2%	68.5%	66.9%
In general, how accepting do you think others in your local community are of conventional gas development in the region				
Others level acceptance of conventional gas development in region	2.57	2.55	2.59	2.59

Survey item	Millicent and surrounds	Penola and surrounds	Mount Gambier and surrounds	Total
<b>COMMUNITY RESILIENCE AND ADAPTATION</b>				
How much do you agree that [local area] and surrounds will adapt to this conventional gas development				
Agreement that region will adapt to conventional gas development	3.00	3.18	3.11	3.10
Level of community adaptation - Which of the following best describes how [local area] and surrounds will deal with this conventional development?				
How region will deal with conventional gas development				
Resist it	18.3%	17.9%	13.9%	15.0%
Not cope	3.6%	2.4%	6.4%	5.6%
Only just cope	18.0%	27.2%	19.3%	19.8%
Adapt to the changes	55.4%	47.3%	50.9%	51.3%
Change into something different but better	4.7%	5.2%	9.5%	8.3%
<b>KNOWLEDGE AND INFORMATION</b>				
Information provision - Over the last couple of years, how much information about conventional gas development in the south-east has been provided to the community by the:				
State government	2.17	2.51	2.26	2.27
Local government	2.23	2.45	2.35	2.34
Gas industry	1.92 <sup>L</sup>	2.69 <sup>H</sup>	2.14 <sup>M</sup>	2.16
Anti-gas groups	3.11 <sup>L</sup>	3.64 <sup>H</sup>	3.19 <sup>L</sup>	3.22
Local papers and radio	2.78 <sup>L</sup>	3.40 <sup>H</sup>	3.00 <sup>M</sup>	3.00
Knowledge confidence - How much do you feel you know about the conventional gas industry?				
Level known about conventional gas industry	2.60 <sup>L</sup>	3.12 <sup>H</sup>	2.64 <sup>L</sup>	2.67
Information need - How much more information would you like to know?				
Additional information would like to know about conventional gas industry	3.52	3.52	3.34	3.39
When it comes to conventional gas development in the south east region, how aware are you that:				
Hydraulic fracturing (fracking) was banned in the south east for 10 years in late 2018	3.86 <sup>L</sup>	4.42 <sup>H</sup>	3.83 <sup>L</sup>	3.89
Hydraulic fracturing is not needed to extract conventional gas in the south east	3.22 <sup>L</sup>	4.07 <sup>H</sup>	3.26 <sup>L</sup>	3.33
A relatively small amount of water is used for the development of conventional gas resources when compared to shale gas	2.70 <sup>L</sup>	3.31 <sup>H</sup>	2.67 <sup>L</sup>	2.74
A handful of conventional wells can produce large volumes of gas (e.g., sufficient for the south east region)	2.81 <sup>L</sup>	3.57 <sup>H</sup>	2.92 <sup>L</sup>	2.96
Overall, how aware are you about conventional gas development in the south east	2.86 <sup>L</sup>	3.51 <sup>H</sup>	3.01 <sup>L</sup>	3.03
When it comes to the differences between conventional and unconventional gas development (e.g. traditional vs. shale gas), how much do you feel you understand about the differences.				
Level of understanding of conventional and unconventional gas	2.60 <sup>L</sup>	3.13 <sup>H</sup>	2.56 <sup>L</sup>	2.62

## Appendix E Tables of Demographic Differences

Apx Table E. 1 Demographic differences: Mean scores based on subregions (area of interest)

Dimensions	Millicent and	Penola and	Mount Gambier	SE Region
<b>COMMUNITY WELLBEING</b>				
Personal safety	<b>4.24<sup>L</sup></b>	<b>4.68<sup>H</sup></b>	<b>4.16<sup>L</sup></b>	4.22
Income sufficiency	3.86	<b>4.10<sup>H</sup></b>	<b>3.72<sup>L</sup></b>	3.78
Health	<b>3.74<sup>L</sup></b>	<b>4.03<sup>H</sup></b>	<b>3.75<sup>L</sup></b>	3.78
Services and facilities	3.59	3.57	3.59	3.59
Town appearance	4.20	4.34	4.30	4.28
Roads	<b>2.95<sup>L</sup></b>	<b>3.08</b>	<b>3.19<sup>H</sup></b>	3.14
Environmental quality	<b>4.16<sup>H</sup></b>	<b>4.24<sup>H</sup></b>	<b>3.94<sup>L</sup></b>	4.01
Environmental management	3.63	3.45	3.68	3.65
Local decision-making and trust	<b>3.52<sup>H</sup></b>	<b>3.24<sup>L</sup></b>	<b>3.29<sup>L</sup></b>	3.32
Economic opportunities	<b>2.68<sup>L</sup></b>	<b>3.44<sup>H</sup></b>	<b>2.97<sup>M</sup></b>	2.97
Community cohesion	3.76	3.87	3.66	3.70
Community trust	<b>3.59<sup>H</sup></b>	<b>3.86<sup>L</sup></b>	<b>3.51<sup>L</sup></b>	3.56
Community participation	<b>3.32<sup>L</sup></b>	<b>3.67<sup>H</sup></b>	3.51	3.49
Community spirit	4.01	<b>4.42<sup>H</sup></b>	<b>3.86<sup>L</sup></b>	3.94
Social interaction	3.73	3.94	3.71	3.74
Overall community wellbeing	4.17	<b>4.32<sup>H</sup></b>	<b>4.10<sup>L</sup></b>	4.13
Expected future wellbeing	4.15	4.32	4.13	4.15
Place attachment	4.41	4.46	4.40	4.41
<b>CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES</b>				
Perceived impacts	3.56	3.42	3.40	3.43
Risk manageability	3.16	3.02	3.00	3.61
Risk severity	3.74	3.72	3.57	3.03
Perceived benefits	3.14	2.95	3.05	3.05
Distributional fairness	3.34	3.19	3.30	3.30
Procedural fairness	2.33	2.43	2.48	2.45
Relationship quality	2.31	2.50	2.39	2.39
Governance overall	2.87	2.84	2.83	2.84
Formal governance	3.02	2.83	3.05	3.02
Engaging community	3.06	2.92	3.00	3.00
Working collaboratively	2.81	2.94	2.79	2.81
Trust in gas governing bodies	2.63	2.60	2.55	2.57
Trust in gas companies	2.47	2.79	2.60	2.60
Knowledge confidence	<b>2.95<sup>L</sup></b>	<b>3.59<sup>H</sup></b>	<b>2.98<sup>L</sup></b>	3.03
Information need	3.52	3.52	3.34	3.39
Community attitudes and feelings toward conventional gas	2.97	2.97	3.06	3.04

Note: Bold font indicates a significant difference; Means with different superscript letters are significantly different (L = lower; H=higher)



**Apx Table E. 2 Demographic differences: Mean scores based on LGA**

Dimensions	Wattle Range	Mount Gambier	Grant	SE Region
<b>COMMUNITY WELLBEING</b>				
Personal safety	<b>4.40<sup>H</sup></b>	<b>4.09<sup>L</sup></b>	<b>4.37<sup>H</sup></b>	4.22
Income sufficiency	<b>3.95<sup>H</sup></b>	<b>3.64<sup>L</sup></b>	<b>4.00<sup>H</sup></b>	3.78
Health	3.85	3.74	3.80	3.78
Services and facilities	3.58	3.61	3.52	3.59
Town appearance	4.25	4.30	4.28	4.28
Roads	<b>3.00<sup>L</sup></b>	<b>3.20<sup>H</sup></b>	3.15	3.14
Environmental quality	<b>4.19<sup>H</sup></b>	<b>3.87<sup>L</sup></b>	<b>4.15<sup>H</sup></b>	4.01
Environmental management	<b>3.57<sup>L</sup></b>	3.64	<b>3.80<sup>H</sup></b>	3.65
Local decision-making and trust	<b>3.42<sup>H</sup></b>	<b>3.23<sup>L</sup></b>	3.45	3.32
Economic opportunities	2.96	2.93	3.09	2.97
Community cohesion	3.80	3.67	3.65	3.70
Community trust	<b>3.69<sup>H</sup></b>	<b>3.48<sup>L</sup></b>	3.62	3.56
Community participation	<b>3.45<sup>L</sup></b>	<b>3.41<sup>L</sup></b>	<b>3.82<sup>H</sup></b>	3.49
Community spirit	<b>4.16<sup>H</sup></b>	<b>3.81<sup>L</sup></b>	<b>4.01<sup>H</sup></b>	3.94
Social interaction	3.81	3.68	3.82	3.74
Overall community wellbeing	<b>4.22<sup>H</sup></b>	<b>4.06<sup>L</sup></b>	<b>4.23<sup>H</sup></b>	4.13
Expected future wellbeing	4.21	4.08	4.30	4.15
Place attachment	4.43	4.36	4.52	4.41
<b>CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES</b>				
Perceived impacts	3.51	3.38	3.47	3.43
Risk manageability	3.11	3.00	2.98	3.61
Risk severity	3.74	3.54	3.64	3.03
Perceived benefits	3.07	3.03	3.08	3.05
Distributional fairness	3.29	3.33	3.23	3.30
Procedural fairness	2.36	2.51	2.40	2.45
Relationship quality	2.38	2.40	2.35	2.39
Governance overall	2.86	2.85	2.80	2.84
Formal governance	2.95	3.12	2.82	3.02
Engaging community	3.01	2.98	3.05	3.00
Working collaboratively	2.85	2.79	2.77	2.81
Trust in gas governing bodies	2.62	2.57	2.50	2.57
Trust in gas companies	2.58	2.63	2.52	2.60
Knowledge confidence	3.18	2.98	3.01	3.03
Information need	3.52	3.28	3.53	3.39
Community attitudes and feelings toward conventional gas	2.97	3.09	2.99	3.04

*Note:* Bold font indicates a significant difference; Means with different superscript letters are significantly different (L = lower; H=higher)

**Apx Table E. 3 Demographic differences: Mean scores based on living In-town and Out-of-town**

Dimensions	In-town	Out-of-town	SE Region
<b>COMMUNITY WELLBEING</b>			
Personal safety	<b>4.18<sup>L</sup></b>	<b>4.37<sup>H</sup></b>	4.22
Income sufficiency	3.75	3.88	3.78
Health	<b>3.74<sup>L</sup></b>	<b>3.89<sup>H</sup></b>	3.78
Services and facilities	3.61	3.52	3.59
Town appearance	<b>4.32<sup>H</sup></b>	<b>4.17<sup>L</sup></b>	4.28
Roads	3.17	3.04	3.14
Environmental quality	<b>3.94<sup>L</sup></b>	<b>4.23<sup>H</sup></b>	4.01
Environmental management	3.65	3.64	3.65
Local decision-making and trust	3.32	3.30	3.32
Economic opportunities	2.93	3.09	2.97
Community cohesion	3.71	3.66	3.70
Community trust	3.53	3.65	3.56
Community participation	3.44	3.64	3.49
Community spirit	3.91	4.02	3.94
Social interaction	<b>3.79<sup>H</sup></b>	<b>3.56<sup>L</sup></b>	3.74
Overall community wellbeing	4.12	4.16	4.13
Expected future wellbeing	4.15	4.16	4.15
Place attachment	4.41	4.39	4.41
<b>CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES</b>			
Perceived impacts	3.41	3.51	3.43
Risk manageability	3.04	2.98	3.61
Risk severity	3.59	3.68	3.03
Perceived benefits	3.03	3.11	3.05
Distributional fairness	3.31	3.26	3.30
Procedural fairness	2.44	2.48	2.45
Relationship quality	2.39	2.37	2.39
Governance overall	2.85	2.81	2.84
Formal governance	3.04	2.95	3.02
Engaging community	3.00	2.99	3.00
Working collaboratively	2.81	2.78	2.81
Trust in gas governing bodies	2.58	2.53	2.57
Trust in gas companies	2.60	2.60	2.60
Knowledge confidence	3.01	3.11	3.03
Information need	3.39	3.37	3.39
Community attitudes and feelings toward conventional gas	3.05	3.01	3.04

*Note:* Bold font indicates a significant difference; Means with different superscript letters are significantly different (L = lower; H=higher)

**Apx Table E. 4 Demographic differences: Mean scores based on farm ownership**

Dimensions	Farm owner	Non-owner
<b>COMMUNITY WELLBEING</b>		
Personal safety	<b>4.45</b>	<b>4.20</b>
Income sufficiency	<b>4.31</b>	<b>3.73</b>
Health	<b>4.04</b>	<b>3.75</b>
Services and facilities	3.68	3.58
Town appearance	4.27	4.29
Roads	2.98	3.15
Environmental quality	<b>4.38</b>	<b>3.97</b>
Environmental management	3.50	3.66
Local decision-making and trust	3.47	3.30
Economic opportunities	3.55	2.91
Community cohesion	3.88	3.68
Community trust	3.73	3.54
Community participation	3.74	3.47
Community spirit	<b>4.22</b>	<b>3.91</b>
Social interaction	3.88	3.73
Overall community wellbeing	<b>4.31</b>	<b>4.11</b>
Expected future wellbeing	<b>4.44</b>	<b>4.12</b>
Place attachment	<b>4.56</b>	<b>4.39</b>
<b>CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES</b>		
Perceived impacts	3.39	3.43
Risk manageability	2.87	3.04
Risk severity	3.67	3.60
Perceived benefits	2.98	3.06
Distributional fairness	3.09	3.32
Procedural fairness	2.29	2.47
Relationship quality	2.43	2.38
Governance overall	2.70	2.86
Formal governance	2.73	3.05
Engaging community	2.85	3.02
Working collaboratively	2.75	2.81
Trust in gas governing bodies	2.41	2.58
Trust in gas companies	2.61	2.60
Knowledge confidence	<b>3.64</b>	<b>2.98</b>
Information need	3.48	3.38
Community attitudes and feelings toward conventional gas	2.91	3.05

*Note:* Bold font indicates a significant difference

**Apx Table E. 5 Demographic differences: Mean scores based on gender**

Dimensions	Male	Female
<b>COMMUNITY WELLBEING</b>		
Personal safety	<b>4.45</b>	<b>4.00</b>
Income sufficiency	3.90	3.66
Health	3.82	3.73
Services and facilities	<b>3.69</b>	<b>3.49</b>
Town appearance	4.28	4.28
Roads	3.14	3.14
Environmental quality	<b>4.16</b>	<b>3.85</b>
Environmental management	3.67	3.63
Local decision-making and trust	3.33	3.30
Economic opportunities	<b>3.13</b>	<b>2.80</b>
Community cohesion	3.74	3.66
Community trust	3.63	3.49
Community participation	3.49	3.50
Community spirit	3.94	3.93
Social interaction	<b>3.61</b>	<b>3.87</b>
Overall community wellbeing	4.20	4.06
Expected future wellbeing	4.23	4.07
Place attachment	4.41	4.41
<b>CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES</b>		
Perceived impacts	<b>3.20</b>	<b>3.67</b>
Risk manageability	<b>3.16</b>	<b>2.89</b>
Risk severity	3.53	3.69
Perceived benefits	3.06	3.04
Distributional fairness	<b>3.43</b>	<b>3.17</b>
Procedural fairness	2.49	2.42
Relationship quality	2.44	2.34
Governance overall	2.87	2.81
Formal governance	3.05	2.99
Engaging community	3.04	2.96
Working collaboratively	2.83	2.78
Trust in gas governing bodies	2.58	2.55
Trust in gas companies	<b>2.72</b>	<b>2.48</b>
Knowledge confidence	<b>3.31</b>	<b>2.76</b>
Information need	3.30	3.47
Community attitudes and feelings toward conventional gas	<b>3.23</b>	<b>2.85</b>

*Note:* Bold font indicates a significant difference

**Apx Table E. 6 Demographic differences: Mean scores based on age**

Dimensions	18-34 years	35-54 years	55+ years
<b>COMMUNITY WELLBEING</b>			
Personal safety	<b>3.99<sup>L</sup></b>	<b>4.34<sup>H</sup></b>	<b>4.26<sup>H</sup></b>
Income sufficiency	3.52	3.89	3.84
Health	<b>3.61<sup>L</sup></b>	<b>3.71<sup>L</sup></b>	<b>3.92<sup>H</sup></b>
Services and facilities	<b>3.38<sup>L</sup></b>	<b>3.53<sup>L</sup></b>	<b>3.75<sup>H</sup></b>
Town appearance	<b>4.09<sup>L</sup></b>	4.29	<b>4.39<sup>H</sup></b>
Roads	3.23	<b>2.98<sup>L</sup></b>	<b>3.22<sup>H</sup></b>
Environmental quality	<b>3.79<sup>L</sup></b>	<b>4.08<sup>H</sup></b>	<b>4.07<sup>H</sup></b>
Environmental management	3.60	3.69	3.65
Local decision-making and trust	<b>3.09<sup>L</sup></b>	3.35	<b>3.42<sup>H</sup></b>
Economic opportunities	2.85	3.07	2.95
Community cohesion	3.79	3.62	3.71
Community trust	3.43	3.53	3.66
Community participation	3.60	<b>3.64<sup>H</sup></b>	<b>3.31<sup>L</sup></b>
Community spirit	3.97	3.91	3.94
Social interaction	3.98	3.56	3.74
Overall community wellbeing	3.99	4.12	4.21
Expected future wellbeing	<b>3.85<sup>L</sup></b>	4.13	<b>4.33<sup>H</sup></b>
Place attachment	<b>4.25<sup>L</sup></b>	4.37	<b>4.53<sup>H</sup></b>
<b>CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES</b>			
Perceived impacts	3.35	<b>3.31<sup>L</sup></b>	<b>3.57<sup>H</sup></b>
Risk manageability	2.99	3.02	3.05
Risk severity	3.58	3.52	3.70
Perceived benefits	2.95	3.10	3.07
Distributional fairness	3.18	3.41	3.27
Procedural fairness	2.46	2.44	2.46
Relationship quality	2.42	2.40	2.36
Governance overall	2.88	2.90	2.77
Formal governance	3.00	3.14	2.93
Engaging community	2.98	3.11	2.93
Working collaboratively	2.87	2.79	2.78
Trust in gas governing bodies	2.69	<b>2.67<sup>H</sup></b>	<b>2.42<sup>L</sup></b>
Trust in gas companies	2.69	2.66	2.50
Knowledge confidence	<b>2.78<sup>L</sup></b>	3.05	<b>3.16<sup>H</sup></b>
Information need	3.46	3.43	3.31
Community attitudes and feelings toward conventional gas	2.99	3.18	2.95

Note: Bold font indicates a significant difference; Means with different superscript letters are significantly different (L = lower; H=higher)

**Apx Table E. 7 Demographic differences: Mean scores based on household income**

Dimensions	less than \$40,000	\$40,000 to \$80,000	\$80,000 to \$120,000	\$120,000 or more
<b>COMMUNITY WELLBEING</b>				
Personal safety	4.17	4.18	4.24	4.34
Income sufficiency	<b>3.20<sup>L</sup></b>	<b>3.53<sup>L</sup></b>	<b>4.13<sup>M</sup></b>	<b>4.56<sup>H</sup></b>
Health	<b>3.77</b>	<b>3.60<sup>L</sup></b>	<b>3.80</b>	<b>3.96<sup>H</sup></b>
Services and facilities	3.64	3.51	3.67	3.53
Town appearance	4.35	4.20	4.29	4.23
Roads	3.16	3.15	3.00	3.08
Environmental quality	3.93	3.96	4.10	4.15
Environmental management	3.58	3.57	3.64	3.81
Local decision-making and trust	3.27	3.19	3.37	3.37
Local decision making	3.25	3.17	3.31	3.25
Trust in local leaders	3.29	3.21	3.42	3.49
Economic opportunities	<b>2.77<sup>L</sup></b>	<b>2.86<sup>L</sup></b>	<b>3.15<sup>H</sup></b>	<b>3.22<sup>H</sup></b>
Community cohesion	3.61	3.67	3.80	3.63
Community trust	3.44	3.55	3.63	3.65
Community participation	<b>3.17<sup>L</sup></b>	<b>3.54<sup>M</sup></b>	<b>3.59<sup>M</sup></b>	<b>3.97<sup>H</sup></b>
Community spirit	3.82	3.94	3.98	4.04
Social interaction	<b>3.46<sup>L</sup></b>	<b>3.71</b>	<b>3.86<sup>H</sup></b>	<b>3.93<sup>H</sup></b>
Overall community wellbeing	4.05	3.97	4.23	4.29
Expected future wellbeing	4.04	4.08	4.23	4.32
Place attachment	4.38	4.40	4.37	4.46
<b>CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES</b>				
Perceived impacts	<b>3.65<sup>H</sup></b>	<b>3.50<sup>H</sup></b>	<b>3.51<sup>H</sup></b>	<b>2.99<sup>L</sup></b>
Risk manageability	<b>2.99<sup>L</sup></b>	<b>3.15<sup>H</sup></b>	<b>2.85<sup>L</sup></b>	<b>3.15<sup>H</sup></b>
Risk severity	<b>3.78<sup>H</sup></b>	<b>3.72<sup>H</sup></b>	<b>3.68<sup>H</sup></b>	<b>3.21<sup>L</sup></b>
Perceived benefits	3.05	3.04	2.92	3.25
Distributional fairness	3.30	3.43	3.13	3.43
Procedural fairness	2.54	2.39	2.25	2.67
Relationship quality	2.50	2.24	2.28	2.53
Governance overall	2.87	2.80	2.75	3.04
Formal governance	3.03	2.94	2.89	3.36
Engaging community	3.07	2.98	2.84 <sup>L</sup>	3.23 <sup>H</sup>
Working collaboratively	2.84	2.78	2.75	2.95
Trust in gas governing bodies	2.56	2.51	2.53	2.71
Trust in gas companies	2.60	2.57	2.44	2.89
Knowledge confidence	<b>2.80<sup>L</sup></b>	<b>2.97<sup>M</sup></b>	<b>3.13<sup>M</sup></b>	<b>3.37<sup>H</sup></b>
Information need	<b>3.16<sup>L</sup></b>	3.46	3.51	<b>3.69<sup>H</sup></b>
Community attitudes and feelings toward conventional gas	<b>2.84<sup>L</sup></b>	<b>2.98<sup>L</sup></b>	<b>2.88<sup>L</sup></b>	<b>3.48<sup>H</sup></b>

Note: Bold font indicates a significant difference; Means with different superscript letters are significantly different (L = lower; H=higher)

# References

- Askland, H., Askew, M., Hanley, J., Sherval, M., Farrugia, D., Threadgold, S. and Coffey, J. (2016). *Local Attitudes to Changing Land Use - Narrabri Shire*. Full Report. Newcastle, NSW: The University of Newcastle, NSW Department of Primary Industries.
- Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) (2019). About my region – South-East South Australia. Viewed 23 September 2019, <<http://www.agriculture.gov.au/abares/research-topics/aboutmyregion/sa-south-east>>
- Australian Bureau of Statistics (ABS) (2016). TableBuilderViewed 12 September 2019 <https://www.abs.gov.au/census>
- Beach Energy (2019). Otway Basin South Australia. Viewed 21 October 2019 <<https://www.beachenergy.com.au/sa-otway-basin/>>
- Curran, G. (2017). Social licence, corporate social responsibility and coal seam gas: framing the new political dynamics of contestation. *Energy Policy*, 101, 427-435. doi:10.1016/j.enpol.2016.10.042
- Department of Energy and Mining (DEM) (2019a). Historical Highlights. Viewed 21 October 2019 <[http://www.energymining.sa.gov.au/petroleum/exploration\\_and\\_development/historical\\_highlights](http://www.energymining.sa.gov.au/petroleum/exploration_and_development/historical_highlights)>
- Department of Energy and Mining (DEM) (2019b). Holders of Petroleum and Geothermal Tenements in South Australia. Current at September 2019. Viewed 21 October 2019 <<https://sarigbasis.pir.sa.gov.au/WebtopEw/ws/samref/sarig1/image/DDD/ISP01.pdf>> (See page 39)
- GISERA (Gas Industry Social and Environmental Research Alliance) (2019). Research on conventional gas in South East South Australia: Social and economic factsheet, February 2019, <https://gisera.csiro.au/project/assessing-the-value-of-locally-produced-conventional-gas-in-sas-south-east/>
- Grubert, E., & Skinner, W. (2017). A town divided: Community values and attitudes towards coal seam gas development in Gloucester, Australia. *Energy Research and Social Science*, 30, 43-52. doi:10.1016/j.erss.2017.05.041
- Gunningham, N., Kagan, R. A., & Thornton, D. (2004). Social license and environmental protection: why businesses go beyond compliance. *Law & Social Inquiry*, 29(2), 307-341.
- McCrea, R. (2014) Modelling effects of intervening variables using path analysis, In R. J. Stimson (Ed) *Handbook for Spatially Integrated Social Science Research Methodology*, Edward Elgar
- McCrea, R., Walton, A. and Leonard, R., (2014). A conceptual framework for investigating community wellbeing and resilience. *Rural Society*, 23 (3), 270-282.

- McCrea, R., Walton, A. and Leonard, R. (2019). Rural communities and unconventional gas development: What's important for maintaining subjective community wellbeing and resilience over time? *Journal of Rural Studies*, 68, 87-99.
- Measham, T.G. and Zhang, A. (2019). Social licence, gender and mining: Moral conviction and perceived economic importance. *Resources Policy*, Vol 61, pp 363-368
- Moffat, K., & Zhang, A. (2014). The paths to social licence to operate: An integrative model explaining community acceptance of mining. *Resources Policy*, 39, 61-70.
- The Advertiser (April 23 2018). Beach Energy plans new \$22.6m gas plant in South East SA
- Walton, A. and McCrea, R. (2017). Community wellbeing and local attitudes to coal seam gas development Social Baseline Assessment: Narrabri project - Phase 3 Survey report. Australia: CSIRO.
- Walton, A. and McCrea, R. (2018). Trends in community wellbeing and local attitudes to coal seam gas development - 2014 – 2016 - 2018: Western Downs and Eastern Maranoa regions, Queensland, Survey report. Brisbane, Australia CSIRO. <https://gisera.csiro.au/project/trends-in-community-wellbeing-and-attitudes-to-csg-development-survey-3/>
- Vintage Energy (2017). Vintage Energy/Rawson Oil and Gas Joint Venture awarded almost \$5 million for gas exploration. Viewed 21 October 2019, <<http://www.vintageenergy.com.au/news/vintage-energyrawson-oil-and-gas-joint-venture-awarded-almost-million-for-gasexploration-124.html>>
- World Oil (2018). Beach Energy discovers new gas field in Australia's Otway basin. Viewed 21 October 2019 <http://www.worldoil.com/news/2018/1/11/beach-energy-discovers-new-gas-field-in-australias-otway-basin>
- Zhang, A., Measham, T., & Moffat, K. (2018). Preconditions for social licence: The importance of information in initial engagement. *Journal of Cleaner Production*, 172(Supplement C), 1559-1566. doi: <https://doi.org/10.1016/j.jclepro.2017.10.323>
- Zhang, A., & Moffat, K. (2015). A balancing act: The role of benefits, impacts and confidence in governance in predicting acceptance of mining in Australia. *Resources Policy*, 44, 25-34. doi:10.1016/j.resourpol.2015.01.001







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