

# Executive Summary

This research establishes baseline measures of community wellbeing, community resilience and adaptation, and expected future wellbeing in the context of a proposed coal seam gas (CSG) development in the Narrabri shire of NSW. In addition, it measures and documents local attitudes and perceptions of CSG development and the CSG sector.

The Narrabri Gas Project is in an appraisal stage of development; if it were to proceed such baseline measures are important for measuring changes in community wellbeing over time, understanding and mitigating potential impacts, and helping to realise any opportunities.

## What we did

Using a survey design, we conducted telephone surveys of 400 residents randomly selected from the Narrabri shire. We asked 183 questions about people's views towards quality of life and wellbeing in their community, how they felt their community would adapt or respond to changes from a possible CSG development, and what their expectations were for their community's future. We also asked them about their attitudes and perceptions of CSG and the CSG sector. The survey took 32 minutes on average to complete.

## When

The survey was conducted over a six week period during March – April 2017. The planned timing of the survey was unexpectedly delayed by six weeks to avoid consultation fatigue of shire residents associated with the Environmental Impact Statement (EIS) for the Narrabri Gas project, which was announced in February 2017.

## Where

The survey covered the Narrabri shire in north western NSW. The shire covers approximately 13,000 square kilometres and is home to approximately 13,000 people in 2016. The main centre is Narrabri with Wee Waa and Boggabri the next two biggest towns. The proposed gas project is situated approximately 20 kilometres south of the town of Narrabri.

## Who

Participants were randomly selected using lists of landline and mobile phone numbers and we used quotas to achieve a representative sample. The response rate was very high for telephone surveys at 56%.

- The sample was representative based on the ABS statistics for gender, indigenous identification, employment status and living in-town / out-of-town.
- The sample was over-representative of older residents, so a weighted sample was used in analyses.
- The sample comprised two subregions: Narrabri and surrounds, and the 'rest of the shire' (Boggabri, Wee Waa and their surrounds)

# What we found

## A general comment about describing the results

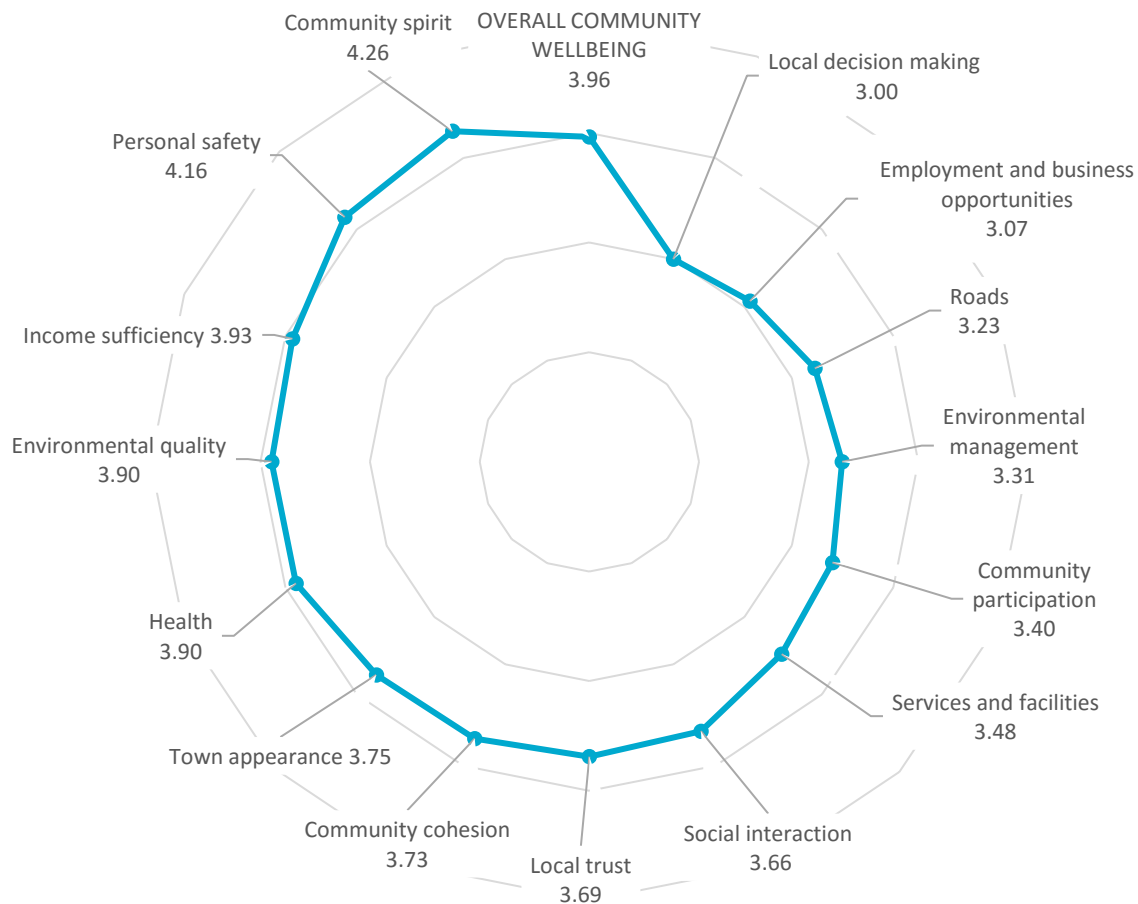
We typically report the results as average scores out of 5 using a scale from 1 to 5 where 1 is the least and 5 is the most. A score below the midpoint of 3 is considered negative or unfavourable on average. Where relevant, we describe results as statistically significant at the .05 level, this means that there was less than a five percent chance that the findings were due to chance.

## Community Wellbeing: Fifteen dimensions evaluated by residents

Results showed overall community wellbeing to be robust; of the fifteen underlying dimensions thirteen were rated positively and two as borderline. Community wellbeing reflects a view that the community provides a good quality of life for its residents. The survey measures fifteen dimensions of community wellbeing covering social, economic, environmental, health, physical infrastructure, and political aspects. For example, dimensions of community wellbeing include perceptions of community spirit and cohesion, local trust, employment and job opportunities, environmental quality, local decision making processes, and level of services and facilities.

As shown in Figure 1, the highest rated dimensions were community spirit and personal safety with scores greater than 4 out of 5, demonstrating very positive perceptions. The lowest rated dimensions were local decision making and employment and business opportunities with scores close to 3 out of 5 indicating borderline perceptions of these dimensions.

Figure 1 Community wellbeing dimensions: Narrabri shire 2017



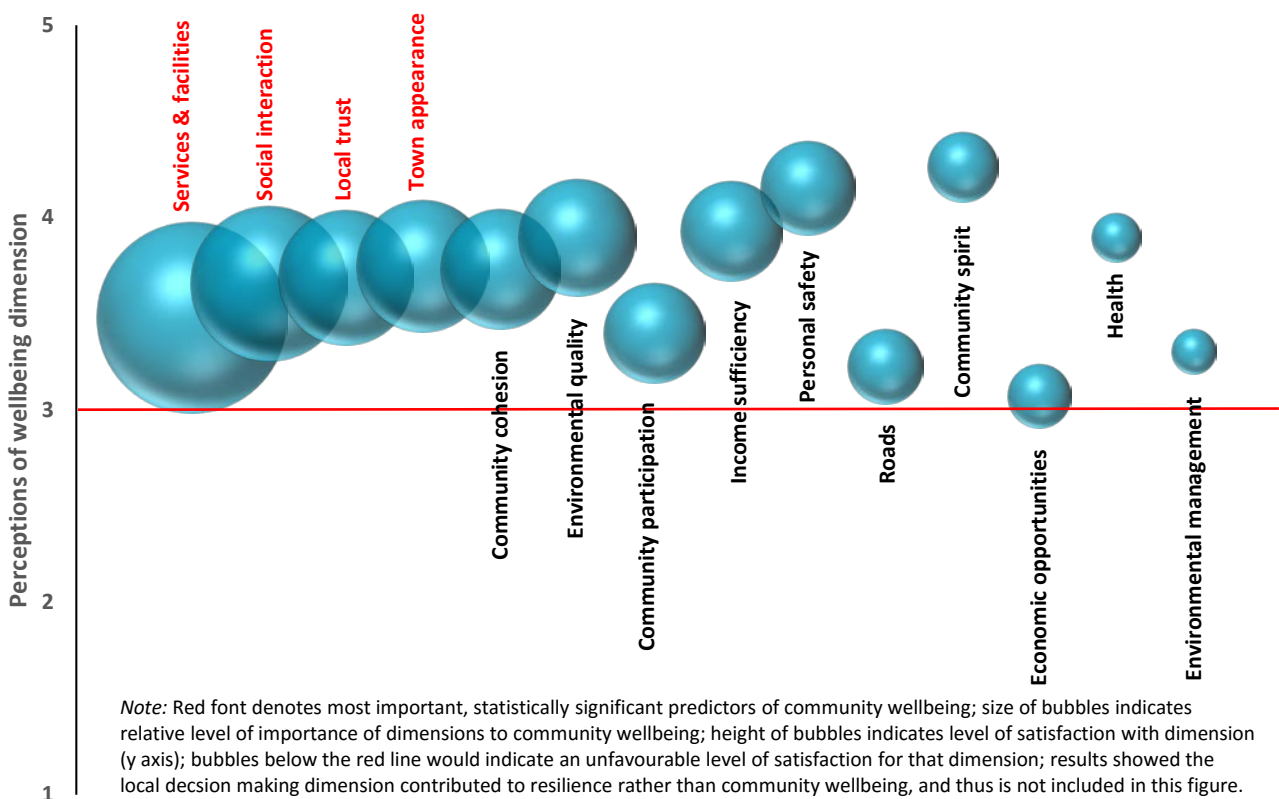
## Most important dimensions for community wellbeing

Analysis showed the four key dimensions, or underlying drivers, that explained a sense of wellbeing in the community. See Figure 2. When residents felt these aspects of their community were strong they also viewed their community as a great place to live, a place that offers a good quality of life to all ages.

### Important dimensions for a sense of wellbeing within the community

1. The level of *services and facilities* – for example schools, child care, medical and health services, sports and leisure facilities, community support services, food and other shopping,
2. The social aspects of community life such as *social interaction*
3. The level of *local trust* within the community
4. The *appearance of local towns* – for example clean with good parks and green space

Figure 2 Community wellbeing dimensions ordered according to importance: Narrabri shire 2017



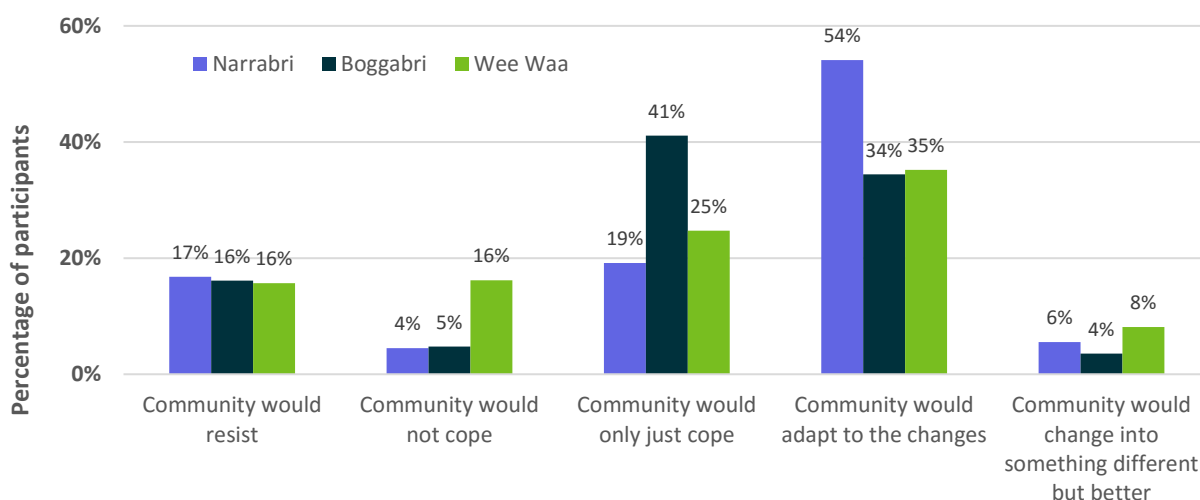
### Key message

Identifying the underlying drivers of community wellbeing provides valuable information on where to focus scarce and valuable resources so that programs and initiatives can help to strengthen community wellbeing.

## Community resilience and responding to change from a proposed CSG development

Across the Narrabri shire there was a diversity of views regarding how participants felt their community would cope and adapt to possible CSG development in the shire. These views ranged from people feeling their community would resist changes through to feeling their community would change into something different but better. As shown in Figure 3, these views also varied among the three different subregions. Residents in Narrabri and surrounds were significantly more likely to think their community would adapt to the changes, while residents in Boggabri and surrounds were significantly more likely to think their community would only just cope, and Wee Waa more likely to think their community would not to cope with possible CSG development.

**Figure 3 Community perceptions of adapting to possible CSG development**



## Indicators of adapting to CSG development

Analyses identified aspects of community wellbeing and resilience that were linked to positive expectations of community adaptation to CSG development. When people felt there would be high community functioning then they expected their community would adapt and cope well with CSG development.

### High community functioning

- ✓ Good sharing of information and working together on problems and opportunities
- ✓ Good planning, leadership, and access to information - working strategically
- ✓ Community involvement and perseverance – community commitment
- ✓ The environment is being managed well for the future: underground water, nature reserves, farming land
- ✓ Good environmental quality - low levels of dust and noise, and good air quality
- ✓ Good roads - satisfied with condition, safety and amount of traffic
- ✓ Effective local decision making processes and strong citizen voice - trust in local leaders and council, people feel listened to and heard, and that they are being kept informed
- ✓ Satisfaction with community participation - participation in community events, groups and local activities

### Key message

When people feel that there are high levels of community functioning they would be more likely to perceive their community as adapting and coping well with CSG development if it were to occur.

## Expectations about the future

On average, residents of the Narrabri shire rated their expected future community wellbeing ( $M = 3.81$ ) less than current perceptions of wellbeing ( $M = 3.96$ ), although they still expected their future wellbeing to be robust in three years.

When asked how they expected their wellbeing could change, Figure 4 shows almost one quarter expected it to improve, one quarter expected it to decline, and about half expected it to stay the same. As depicted in Figure 5, people who thought community wellbeing would decline expected it to drop considerably, in contrast people who thought it would improve expected it to increase by a modest amount.

Figure 4 Expected future wellbeing

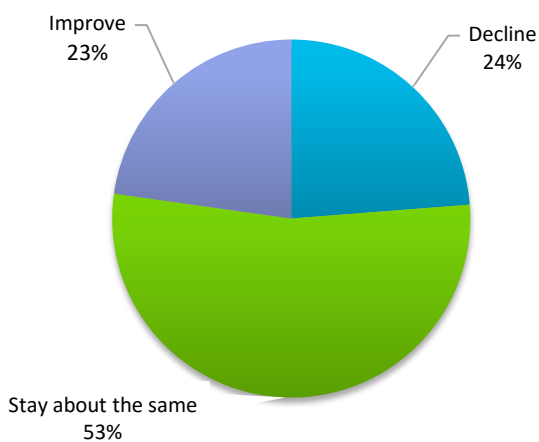
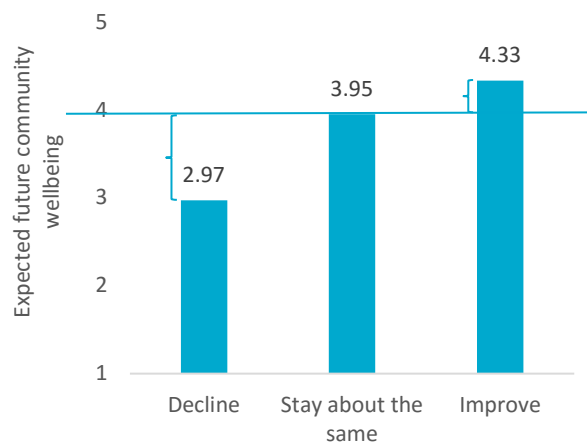


Figure 5 Differences in expected future wellbeing



## Drivers of expected future community wellbeing

Expectations of future community wellbeing were largely explained by three factors: perceptions of *current community wellbeing*; perceptions of *resilience actions*; and the strength of a persons' *attachment to place*.

When community wellbeing and community resilience were perceived to be strong then people held more positive views about the future wellbeing of their community. Also, the stronger a sense of belonging and attachment to place the more positive people were likely to feel about its future. Attitudes about CSG development were not significant predictors of expected future community wellbeing.

### Key message

If CSG development were to proceed, these results show the importance of proactively developing resilient responses to any proposed development as well as maintaining robust levels of community wellbeing if there is to be a sense of optimism and confidence about the future of the community.

Although current community wellbeing being is high, there also needs to be effective community resilience actions including a strong belief that all stakeholders can effectively work together to address potential problems and to maximise possible opportunities.

If people are not satisfied with community resilience actions and do not believe that local residents, government, business, and resource companies can effectively work together, they will feel less confident about the future of their community.

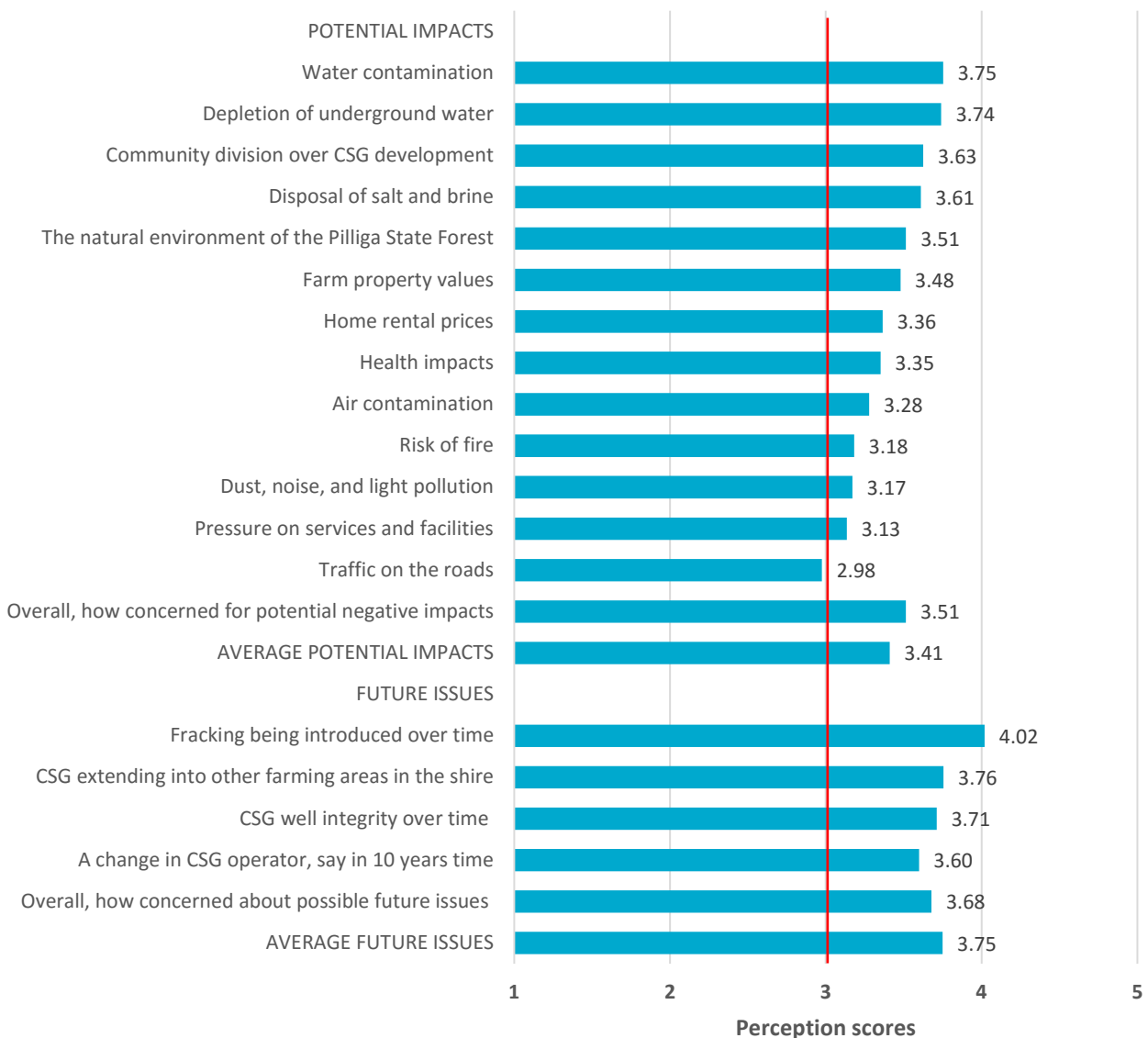
## Perceptions about CSG development and the CSG sector

Based on the earlier research conducted in phase 2 of this project, the survey measured perceptions of eight different groups of issues (factors) that were identified as important to the Narrabri community if CSG development were to proceed. These factors contribute to people’s overall attitude towards CSG development, and include: perceptions of *impacts* and *benefits*, both *procedural* and *distributional fairness*, *governance*, *quality of relationships* with industry, *trust* in both state governing bodies and CSG companies, and confidence in *self-rated knowledge* about CSG development.

### Perceived impacts and benefits

As shown in Figure 8, potential impacts on water were major concerns, although concerns about future issues in years to come were of higher concern on average than some of the more immediate concerns included under potential impacts. These future concerns included the potential introduction of hydraulic fracturing, the extension of development into more intensive agricultural areas, the integrity of the wells over time, and the potential for a change in ownership of the operating company.

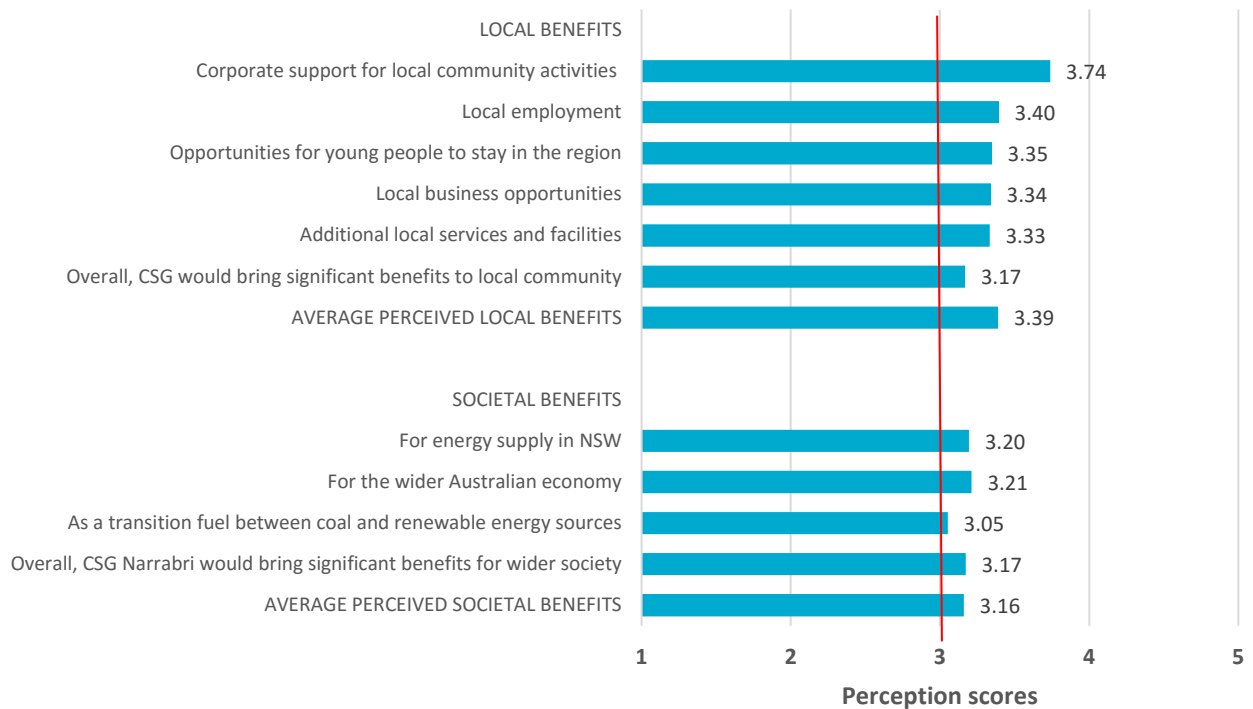
**Figure 6 Perceptions of potential impacts and future issues: Narrabri shire**



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

Local benefits from gas were of higher importance to residents in the Narrabri shire than broader societal benefits, as depicted in Figure 7.

**Figure 7 Perceptions of local and societal benefits: Narrabri shire**

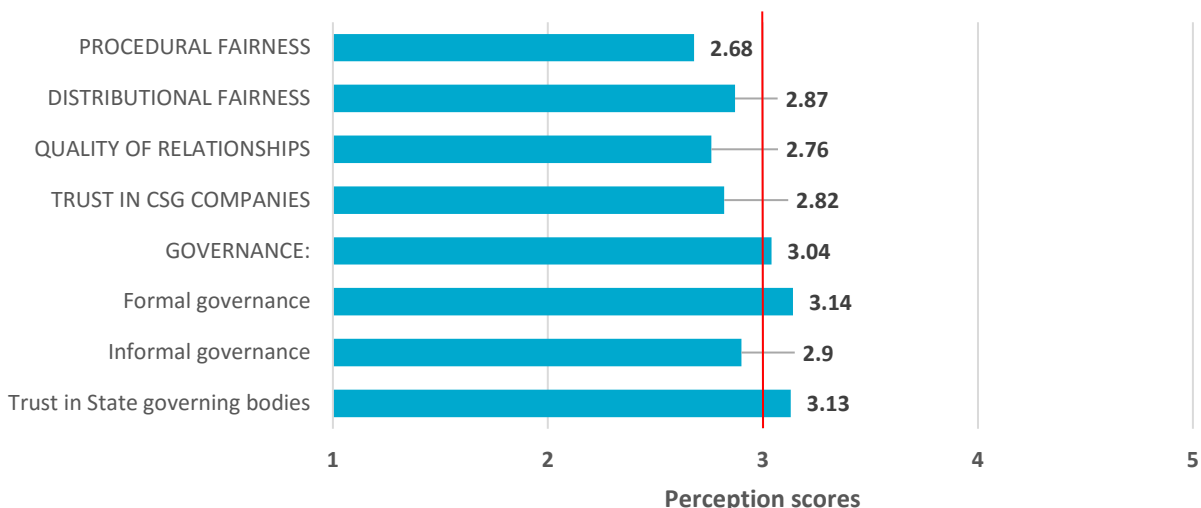


Note: Scores: 1 = strongly disagree and 5 = strongly agree

**Perceptions of fairness, relationship quality, trust in industry and government, and governance**

Perceptions of how a community would potentially be treated if CSG development were to proceed were less than favourable on average in terms of procedural and distributional fairness, the quality of the relationship with industry, and the trust that the community would have in industry. There was confidence that there would be adequate formal governance in terms of regulations and government oversight, but less confidence in the planning and processes around keeping communities informed about CSG development.

**Figure 8 Perceptions of underlying drivers of attitudes towards CGS development: Narrabri shire**



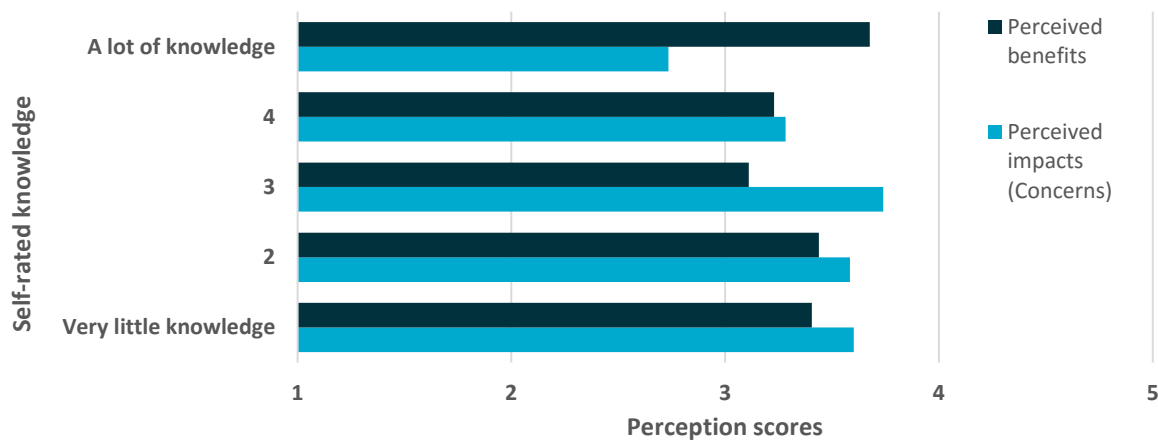
Note: The higher the perception score the more favourable the perception; a score of 3 represents the midline

### Confidence in knowledge about CSG development

The survey measured participants’ self-rated knowledge about the local CSG industry and the information sources they used. On average results showed limited levels of knowledge across the shire ( $M = 2.91$ ), with participants indicating they sourced information from two different sources on average.

Analysis of relationships between knowledge and perceived impacts and benefits showed that perceived impacts tended to be lower with higher self-rated knowledge; however, there was no association between knowledge and perceived benefits. As shown in Figure 9, ‘a lot of knowledge’ was linked to the lowest perceptions of concerns while lower levels of knowledge were linked to higher levels of concern.

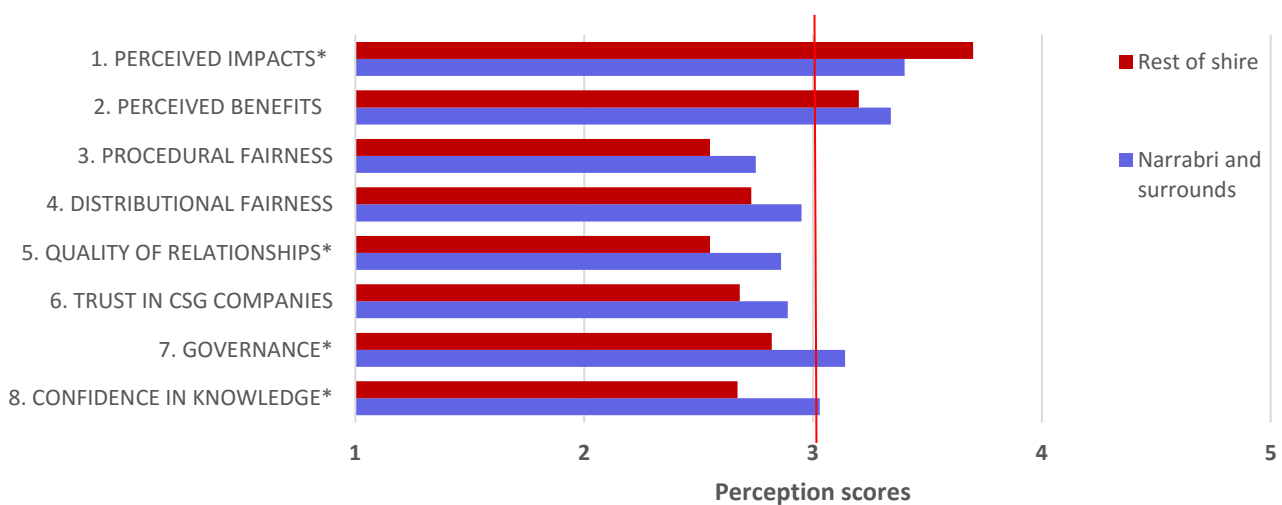
**Figure 9 Levels of knowledge and perceptions of impacts and benefits scores: Narrabri shire**



### Differences between Narrabri and surrounds and the rest of the shire

People who live in Narrabri and surrounds showed significantly different perceptions about CSG development and the gas sector from residents in the rest of the shire. In this survey, the ‘rest of the shire’ represented residents from both Boggabri and surrounds and Wee Waa and surrounds. As shown in Figure 10, the rest of the shire reported higher levels of concern about possible impacts; and more negative perceptions of the quality of relationships with CSG companies and governance (formal, informal, and trust in governance) when compared to Narrabri and surrounds. In general, Narrabri and surrounds held more positive perceptions of the industry and the sector.

**Figure 10 Differences in perceptions of underlying drivers: Narrabri and surrounds and Rest of shire**



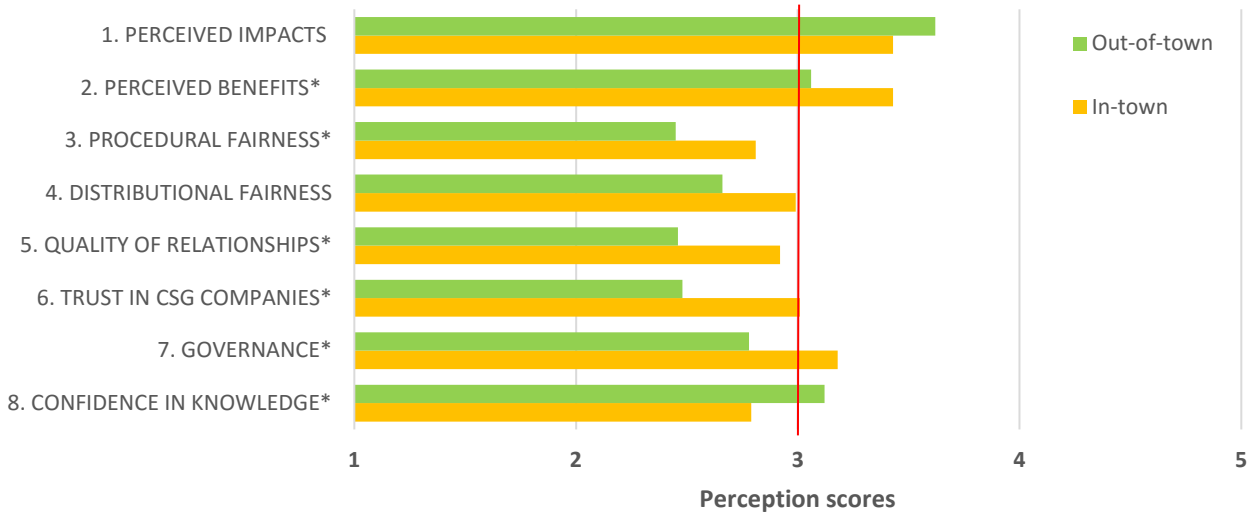
Note: The higher the perception score the more favourable the perception except for *perceived impacts* where the higher the score the greater the level of concern; a score of 3 represents the midline; \* indicates a significant difference between Narrabri and surrounds and the rest of the shire



### Differences based on living In-town and Out-of-town

Results also showed significant differences in perceptions based on whether someone lived in a town or out of a town. As shown in Figure 11, residents who live in town have generally more positive perceptions of CSG development and the sector than those residents who live out of town. In-town residents also have lower concerns (perceived impacts) with CSG development.

**Figure 11 Differences in perceptions of underlying drivers: Living In-town and Out-of-town**

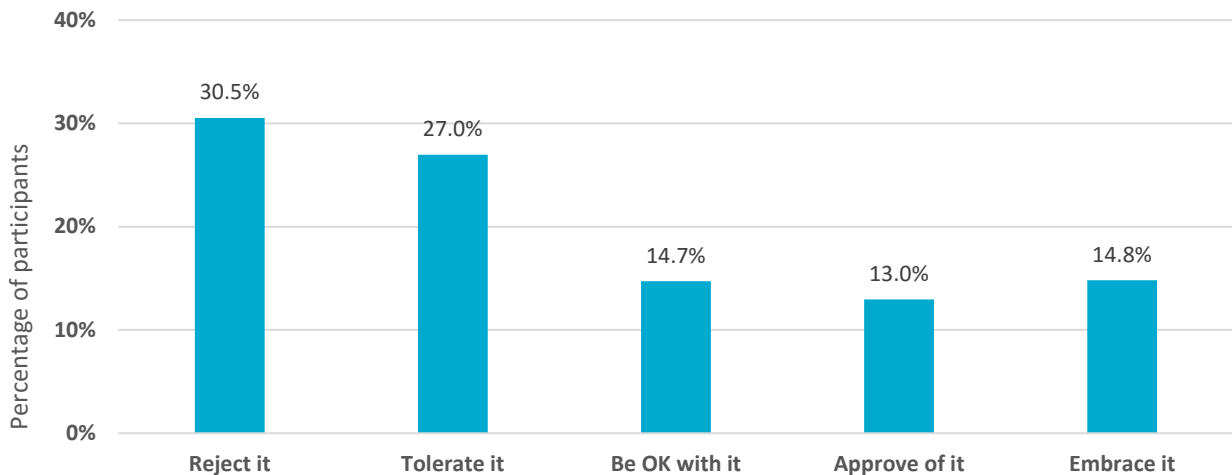


*Note:* The higher the perception score the more favourable the perception except for *perceived impacts* where the higher the score the greater the level of concern; a score of 3 represents the midline; \* indicates a significant difference between In-town and Out-of-town residents

## Attitudes towards CSG development

Attitudes towards CSG development varied between people, and there was a considerable proportion of the population who indicated they reject the notion of CSG development. As shown in Figure 12, at one end of the spectrum 30% of residents indicated they 'reject' CSG development in the Narrabri shire and at the other end of the spectrum 15% of residents indicated they 'embrace' it. However, the remaining respondents (55%) indicated they would either tolerate (27%), be ok with (15%), or approve of (13%) CSG development in the shire.

**Figure 12 Attitudes towards CSG development in the Narrabri shire: 2017**

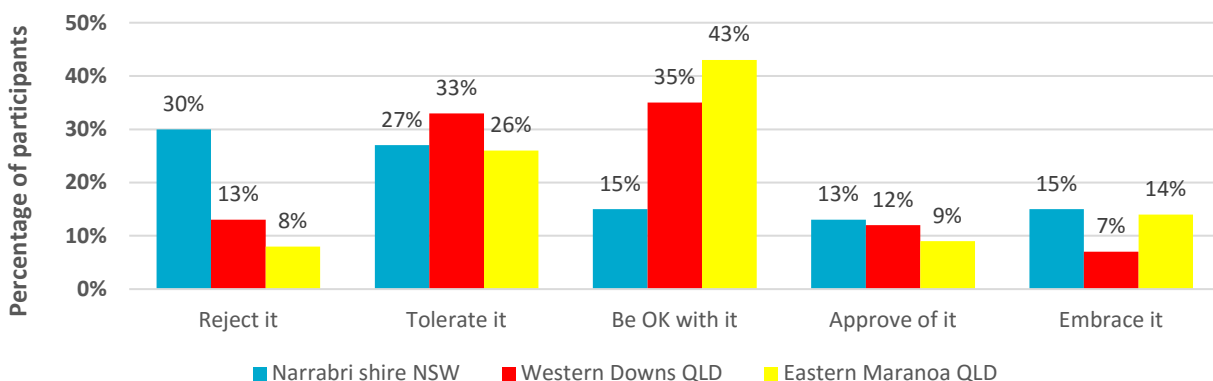


Attitudes towards CSG development also varied based on subregions and whether people lived in town or out of town. Those residents who live in Narrabri town and surrounds held significantly more positive views towards CSG development than those who live in the rest of the shire. Residents who lived out of town held significantly more negative views towards CSG development than those who lived in town.

## Comparison with Queensland gasfields

When results from the Narrabri shire are compared with two gasfield regions in Queensland, the proportion of residents who are accepting of gas to some extent (tolerate through to embrace), as opposed to outright rejection, is much greater in Queensland. In 2016, residents of the Eastern Maranoa, which includes Roma and surrounds indicated the highest proportion of some acceptance of CSG (92%) followed by the Western Downs region (87%). Whereas, in 2017 in the Narrabri shire this drops to 70%. As shown in Figure 13, the biggest difference is the proportion of residents indicating they reject the notion of CSG development (30%) compared to Western Downs and Eastern Maranoa (13% and 8% respectively).

**Figure 13 Attitudes towards CSG development: Narrabri 2017 and Queensland 2016**



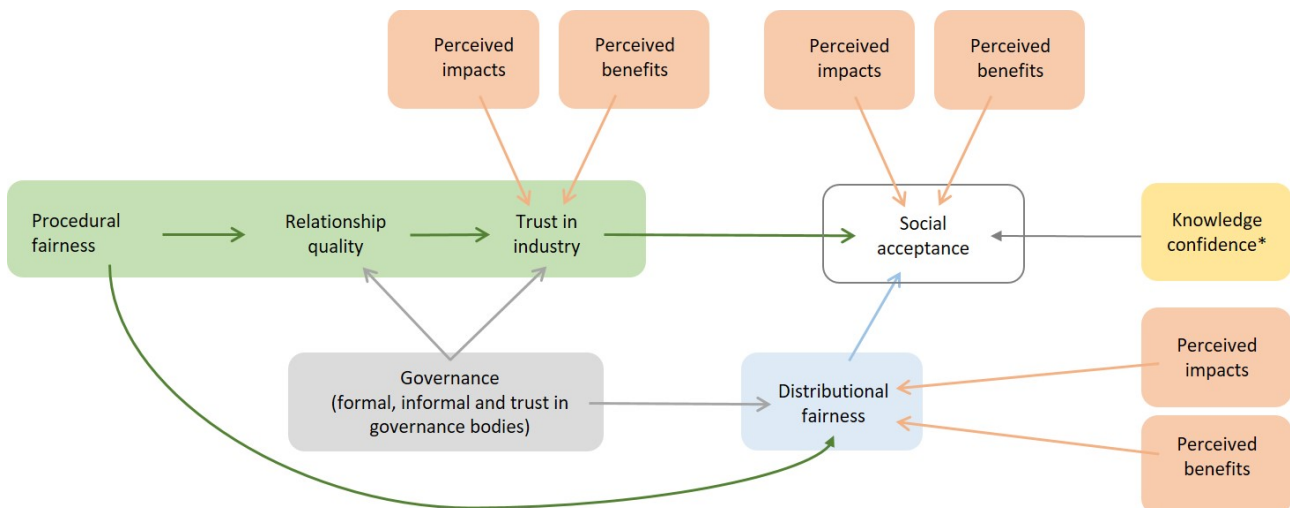
Note: Percentages have been rounded to one decimal point

## Using a model to explain trust and acceptance in the CSG sector

Modelling identified the most important factors that act as drivers underlying trust in the CSG industry and acceptance of CSG development. The model also shows the main relationships among the different factors. We found five *direct* drivers that determine different levels of social acceptance: perceived impacts, perceived benefits, distributional fairness, trust in industry, and confidence in knowledge about CSG. These are shown in Figure 14. These drivers act as independent influences on social acceptance. This means, for example, that even if trust in industry is high, if people perceive impacts to be high then it will still reduce acceptance. Or conversely, even if perceptions of impacts are low, if trust in industry is low it will still reduce acceptance.

The modelling also identified *indirect* drivers of acceptance, often acting through trust and distributional fairness. For example procedural fairness, relationship quality, and governance influence trust, which in turn influences acceptance. Similarly, procedural fairness, and governance influence notions of distributional fairness, which in turn influences acceptance. Note that perceived impacts and benefits are also influencing trust and distributional fairness and thus are acting as both direct and indirect drivers of social acceptance. These relationships highlight the importance of underpinning factors, which indirectly contribute to and ultimately help determine the level of social acceptance.

**Figure 14 Model of social acceptance and trust**



Note: \* this path was curvilinear

## Key points

- Direct drivers of social acceptance are perceived impacts, perceived benefits, distributional fairness, trust in industry, and confidence in knowledge about CSG
- Indirect drivers of social acceptance via trust in the industry included procedural fairness, relationship quality, and governance. Perceived impacts and benefits also impacted trust.
- Governance underpinned trust in industry, perceptions of relationship quality with industry, and perceptions of distributional fairness

## Differences between those rejecting and supporting CSG development

To further describe relationships between these underlying drivers and social acceptance, the means for each of the underlying drivers were compared across three broad attitudes towards CSG development (reject, lukewarm, and support). 'Reject' were those rejecting CSG development in the shire, 'lukewarm' included those residents who would 'tolerate it' or 'be OK with it', and 'support' included those who would 'accept it' or 'embrace it'. The reject and support groups were similar in size, while the lukewarm group was the largest (41.7%). See Figure 15.

Figure 15 Attitude towards CSG development: Three broad groups

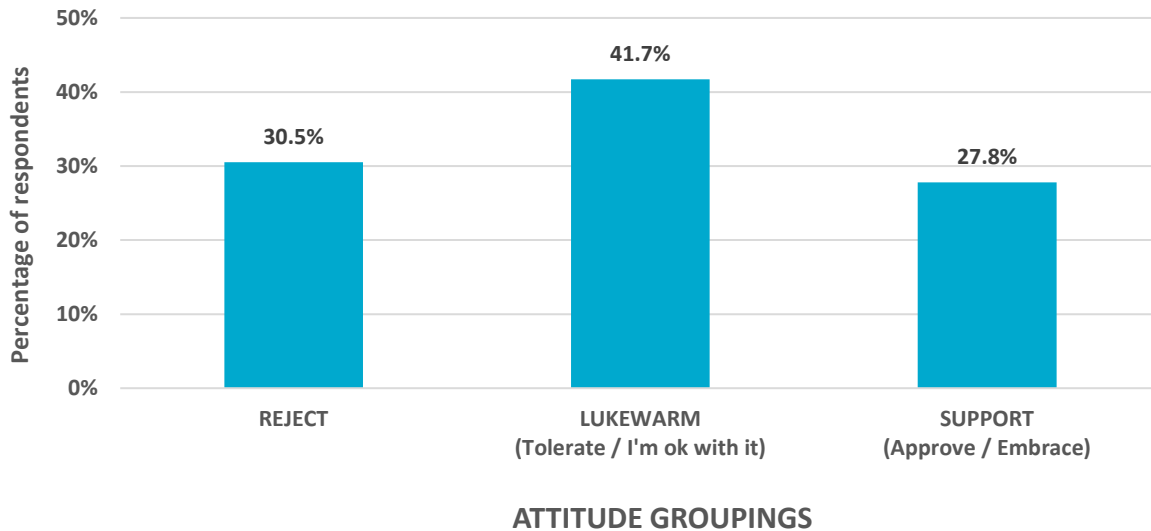
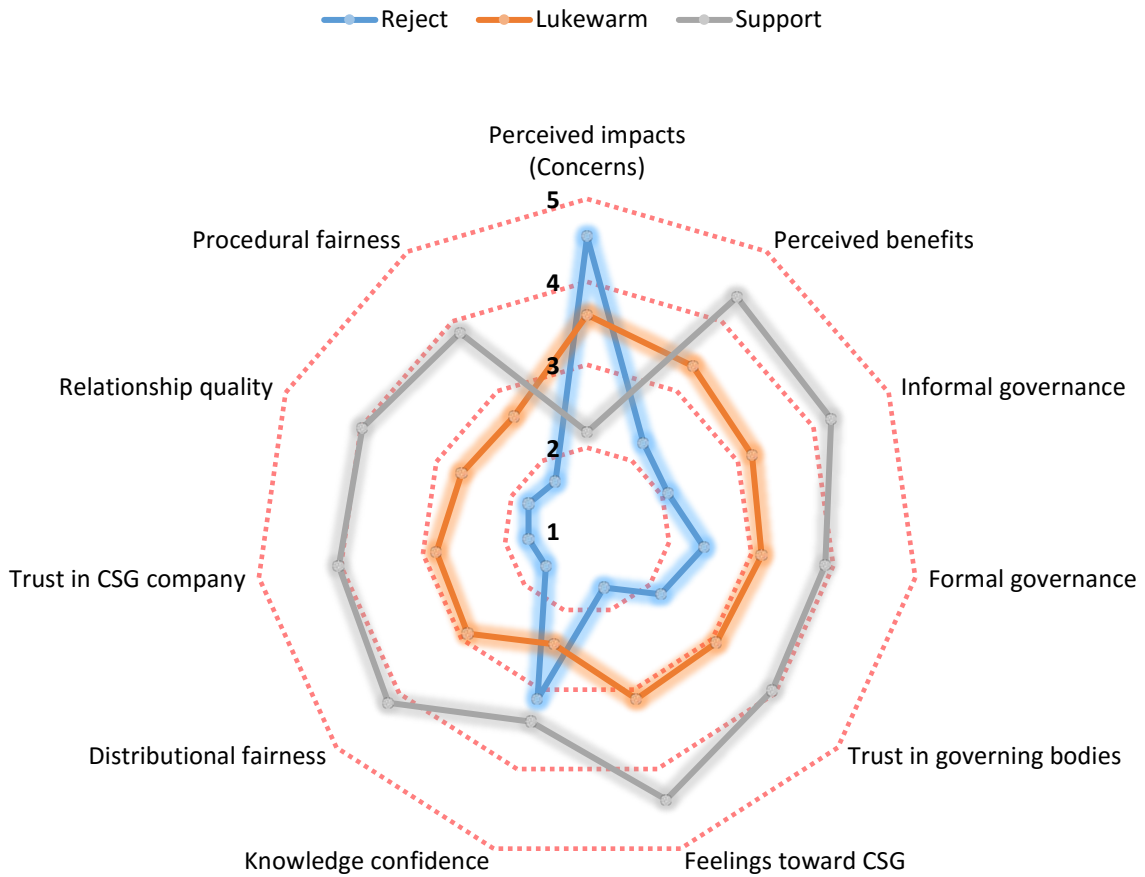


Figure 16 shows how the underlying drivers of trust and acceptance vary based on these three broad attitudes towards CSG development. Those rejecting CSG development had very high concerns with CSG, and rated most other drivers of trust in the industry and social acceptance of the CSG development very lowly. In contrast, those who supported CSG development had relatively low levels of concerns with CSG development on average, and the other drivers were all perceived positively, as shown by the grey line in Figure 16. Interestingly, both those rejecting and supporting CSG development were moderately confident in their level of knowledge about the local CSG industry. The lukewarm group, depicted by the orange line in Figure 16, indicated more neutral attitudes toward other drivers of trust and social acceptance, and were less confident in their level of knowledge. Nonetheless, the lukewarm group were still concerned about potential impacts and future issues associated with CSG development in the shire.

Figure 16 Drivers of trust and social acceptance by three groups of attitudes toward CSG development



Note: The higher the perception score the more favourable the perception except for *perceived impacts* where the higher the score the greater the level of concern; a score of 3 represents the midline

### Key Points

- Those rejecting CSG development had very high concerns (perceived impacts), and low ratings for perceived benefits and the other drivers of trust and social acceptance.
- Those supporting CSG development showed the reverse pattern, though both rejecting and supporting were confident in their levels of knowledge about the CSG industry.
- Those with lukewarm attitudes had more neutral perceptions, though were still concerned about possible impacts from CSG development and had the lowest level of confidence in their knowledge about CSG.