
What Australians don't know about CSG

Public perceptions of coal seam gas

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Summary

Coal seam gas (CSG) is a controversial way of extracting natural gas. While many Australians hold strong views against it, a surprising number are only vaguely aware of the issue. In addition to feeling generally uninformed, many people also express unease about CSG because of the controversy surrounding it. A survey conducted by The Australia Institute has found that more than a third (36 per cent) of people had not heard of coal seam gas.

The survey shows only 30 per cent of respondents were able to identify that CSG extraction took place in both rural and urban areas – more than a third of respondents were not sure where it took place. When asked if they knew the difference between CSG and liquefied natural gas (LNG), 81 per cent said they didn't know the difference.

The effect of CSG on agricultural land was a major concern among respondents, with 96 per cent opposed to CSG extraction if it reduces the productivity of the land – 56 per cent were opposed to CSG extraction even if the farmer whose land was affected was in favour of the project going ahead. This seems to show that for the majority of people the concern is for the land, not just the current owners of the land.

The survey shows that CSG's effect on the environment, particularly on water and farming land, is a considerable concern for Australians. This has led to strong support for the rights of farmers to stop CSG extraction on their land. A significant majority – 89 per cent of respondents – think farmers should have the right to say no to CSG on their own land.

The survey also finds that the public tends to weigh up CSG projects in terms of economic benefit versus environmental cost. When survey respondents were asked to nominate their concerns about CSG, the top four were damage to the local environment, negative impacts on farming land, damage to people's health and water contamination. All of these are environmental concerns.

When asked to nominate the benefits of CSG, the respondents' top four were that increased gas supply would make gas cheaper, that increased gas production would act as a bridging fuel on the transition to renewables, that it would create more jobs and that there would be increased economic activity. These are overwhelmingly economic benefits, and they are refuted in this report. The only environmental benefit that ranked highly was gas acting as a bridging fuel to renewables. While this is an environmental benefit it contains an economic aspect since gas is seen as a cheap alternative to renewables in combating climate change.

The survey also shows that CSG is not an issue that many people think of when asked about what politicians should give more attention to. Only two per cent of respondents ranked CSG as their top choice when asked to select from a list of 15 issues they thought politicians should take action on.

The gas industry has made no genuine effort to allay the fears of the broader public about coal seam gas and this has given rise to high profile community groups that strongly oppose CSG for a number of reasons. Action from these groups and other individuals has led to the gas industry failing to gain a social licence for its projects. The result has been federal and state governments introducing further restrictions on CSG, and renewed debate about the role of coal seam gas in Australia's energy mix.

Introduction

Coal seam gas (CSG) is a form of unconventional natural gas extraction that has expanded rapidly in Australia in recent years. While there are large quantities of available CSG, there have been a number of environmental concerns raised about the process of extracting it. While both the benefits and concerns have been raised in the media, the general public still feels uninformed and unsure about CSG.

While the general public reports feeling uninformed, it also appears to have concerns about CSG – and there are significant areas where there is strong hostility to CSG. The general public's concerns, as well as concerns raised in the scientific community, have seen further restrictions placed on the extraction of CSG by both the federal government and the New South Wales government. In the case of NSW, the state government has justified these new restrictions by claiming the industry has not obtained a social licence from the general public. The restrictions have been fiercely opposed by the gas industry.

In response to these restrictions the gas industry has launched a campaign to highlight the benefits of natural gas. While the campaign talks about the potential economic benefits of natural gas, it does not attempt to deal with any of the environmental concerns that people have expressed. The campaign does not even refer to coal seam gas or CSG but, rather, talks about 'natural gas'.

The unwillingness of the gas industry to talk about CSG in its campaign could be a result of the level of distrust the general public has in CSG. This seems to have been confirmed by the NSW government's recent decision that it would no longer use the terms 'coal seam gas' or 'CSG' and instead use the phrase 'natural gas from coal seams'.

CSG and natural gas are both methane – the difference between the two is where the gas is located and how it is extracted. Conventional natural gas is located in large reservoirs while CSG, which is a form of unconventional natural gas, is found in small pockets in coal seams. The extraction of CSG involves de-watering the coal seams and at times using a controversial method of extraction known as hydraulic fracturing or 'fracking'.

The public generally accepts natural gas, while CSG is viewed with more suspicion. This may explain why the gas industry's latest campaign against restrictions on CSG only refers to natural gas and not to CSG. The gas industry has been generally happy not to engage with the concerns people have about CSG, instead focusing on highlighting economic benefits.

The public tends to see resource projects in terms of economic benefits versus environmental costs. In a survey commissioned by The Australia Institute about the benefits of CSG, respondents overwhelmingly listed economic benefits. When respondents were asked about any concerns they might have, they mainly listed environmental concerns.

This paper is based on the survey results that The Australia Institute commissioned. The survey was conducted online in August 2013. Respondents were sourced from a reputable independent online panel, which earned reward points to participate. There were 966 respondents to the survey and the results were post-weighted by age and gender based on the profile of the adult Australian population. Small variations in sample size can occur from rounding errors as a result of the weighting process.

A social licence

There is a strong sense among the general public and in the political sphere that large resource projects need a social licence to be carried out.¹ That is, a large resource project should enjoy support from the general public, or at least should not be opposed by large sections of the local and wider community.

It could therefore be argued that the gas industry has failed to obtain a social licence in Australia. An important part of this failure has been the industry's inability or unwillingness to engage with and allay the general public's fears about the potential environmental costs of CSG extraction. Indeed, the industry has displayed more than just an unwillingness to allay fears – it seems to have followed a deliberate strategy of attempting to keep people uninformed and unaware of the issues surrounding CSG.

The gas industry has recently faced a growing number of restrictions from federal and state governments because of mounting public concern about the environmental impacts of CSG. The NSW Minister for Resources and Energy, Chris Hartcher, in justifying new restrictions on CSG made the link between a social licence and CSG when he told industry: "You cannot build up corporate support until you build up community support."²

The failure of the CSG industry to build a social licence has two main causes. The first is a growing concern about the environmental impacts of CSG, particularly concern about its impacts on water and farming land. The second is the gas industry's strategy to provide as little meaningful information about CSG as possible, including a failure to make any real attempts to address the growing concerns people have about CSG.

The failure to gain a social licence was evident in public responses to the survey. We will now look at the failure to provide information on CSG and allay public concerns about environmental costs.

Do people feel informed about CSG?

CSG extraction is an issue that has been increasingly in the national spotlight. A high profile grassroots movement called the Lock the Gate alliance has sought to bring greater attention to community concerns about CSG. Yet, despite this, and despite CSG being an increasingly large source of gas in Queensland over the past 10 years, our survey reveals it is still not an issue that a majority of people have taken a close interest in.

CSG is certainly a controversial way of extracting natural gas, but while there are some people who hold strong views about it, there is a surprising number of people who are only vaguely aware of the issue. These people feel uninformed but also, because of the controversy, harbour some unease about CSG. The survey highlights how uninformed people are, finding that more than a third (36 per cent) of people had not heard of coal seam gas.

The survey also shows that CSG is not an issue that many people think of when asked about what politicians should give more attention to. When asked to select from a list of 15 issues that survey respondents thought politicians should act upon, CSG was only two per cent of respondents' top choice.

¹ Haigh (2013) *Building a social licence to operate in the natural resources sector* KPMG (2013) *The Community Investment Dividend: Measuring the value of community investment to support your social licence to operate*

² Macdonald-Smith (2013) *Hartcher defends stricter CSG rules*

When people were asked where CSG extraction took place, only 30 per cent correctly identified that it took place in both rural and urban areas – more than a third of people were not sure where it took place. When asked if they knew the difference between CSG and LNG, 81 per cent said they didn't know the difference.

A lack of available information about CSG has had the obvious effect of making people feel uninformed. When asked how they would feel if a CSG project were proposed in their local area, 86 per cent said they would want more information about CSG. This further reinforces that people do not feel well informed about the issue.

While CSG is still an emerging issue in Australia, those who have engaged with the issue predominantly have concerns. When the ABC's Vote Compass asked if restrictions on CSG should be reduced, almost two thirds of participants disagreed.³

The survey results show that people are unsure and uninformed about CSG. People are aware that CSG is a controversial issue and this leads them to be cautious and uneasy. The general public seems to want to wait for more information on the effects of CSG before it is comfortable with its expansion.

Unusual opposition to CSG

In a survey conducted by The Australia Institute, 37 per cent of respondents who had concerns about CSG listed negative impacts on farming land as one of their top two concerns. The effect of CSG on agricultural land was seen as a major concern, with 96 per cent opposed to CSG extraction if it reduced the productivity of the land. Surprisingly, 56 per cent were opposed to CSG extraction even if the farmer whose land was being affected was in favour of the project going ahead. This seems to show that for the majority of people the concern is for the land, not just the current owners of the land. Other polls have supported these findings – a Nielson poll in April 2013 found that three quarters of voters were opposed to CSG exploration on agricultural land.⁴

The concern about the effect of CSG on farming land has led to an uncommon alliance between farmers and environmentalists. These two groups, who are regularly portrayed as having quite different political views, are working together because of their concern about the environmental impacts of CSG. There is also concern in the general public about the environmental effect of CSG and strong support for the rights of farmers to stop CSG on their land – 89 per cent of respondents think farmers should have to right to say no to CSG on their own land.

This overwhelming view that farmers should be able to say no to CSG projects highlights the unease that people have with CSG and its possible environmental effects. While the polling suggests that most people do not believe they have a good understanding about the issue of CSG, they are clearly suspicious of its possible effect on the environment. If their concerns were unfounded this would be the perfect opportunity for the CSG industry to undertake serious research that showed these concerns were unfounded. As yet it has chosen not to do this.

Environmental costs versus economic benefits

The public tends to see resource projects in terms of economic benefits versus environmental costs. It is accepted that these projects will cause environmental damage but

³ Vote Compass (2013) *Australians back restrictions on foreign ownership, CSG*

⁴ Ravens (2013) *NSW farms 'already protected from CSG'*

that this will be offset, either partly or fully, by economic benefits. So for the general public the debate is often around the extent of the environmental costs versus the economic benefits. Potentially large environmental costs coupled with small perceived economic benefits would see little public support for a project – whereas potentially small environmental costs with large perceived economic benefits would usually mean the project could enjoy strong public support.

The debate is complicated because environmental costs are far more difficult to quantify than economic benefits, so weighing the environmental costs against the economic benefits is subjective. While large resource projects that are likely to have a substantial impact on the environment are subject to regulatory processes that attempt to evaluate all the costs and benefits, even these processes find comparing the costs and benefits difficult. For the general public it is far harder to assess.

The tendency for the general public to judge resource projects on the environmental cost versus the economic benefit helps explain why those against a project emphasise the potential environmental costs while those in favour of a project focus on possible economic benefits. If the economic benefits can be highlighted, this increases the chances that the project will gain general public support. Alternatively, if the negative environmental effects can be highlighted, this will increase the chance the general public will reject the project.

When asked whether they had any concerns about CSG, 34 per cent of respondents said they did. Only 13 per cent said they had no concerns, and the majority, 52 per cent, were unsure. This highlights that people are still very unsure and uninformed about CSG.

Those who did respond that they had concerns about CSG were asked to nominate what their main two concerns were. The top four were:

- Damage to the local environment
- Negative impact on farming land
- Damage to people's health
- Water contamination

These are all environmental impacts. Those concerns that had the least support were the economic impacts with just four per cent saying CSG damaged the local economy and one per cent saying it damaged the national economy. The survey showed the stark divide about the negative impacts of CSG – people's concerns were environmental, not economic.

When people were asked if they thought there were any benefits from CSG, 26 per cent felt there were. Only 11 per cent thought there were no benefits, while 63 per cent were not sure. This again highlights how unsure and uninformed people are about CSG. More people were unsure about potential benefits of CSG than were unsure about concerns with CSG.

When people nominated benefits of CSG they overwhelmingly chose economic benefits. The top four were:

- Increased gas supply will make gas cheaper
- Increased gas production that will act as a bridging fuel on the transition to renewables
- More jobs
- Increased economic activity

The only environmental benefit that ranked highly was gas acting as a bridging fuel to renewables. While this is an environmental benefit, it also has an economic element since gas is seen as a cheap alternative to renewables in combating climate change.

The survey shows that when it comes to CSG the public has environmental concerns but recognises some economic benefits. But what also emerges is that there is a majority of people who are unsure about both costs and benefits.

Industry's communication on CSG

The general public might be treating CSG with deep suspicion, but it would seem that the industry thinks that lying low is the best solution. In a recent multi-million-dollar advertising blitz, the gas industry proclaimed that, "natural gas is a critical part of Australian life, and an extraordinary driver of our nation's future prosperity". The industry association APPEA said:

The campaign will send a clear message that saying 'no' to natural gas development is not consequence-free. Developing new supplies is absolutely critical if Australia wants to put downward pressure on energy prices, meaningfully reduce greenhouse gas emissions, and bring on the next wave of Australia's prosperity.⁵

The campaign focused on what could be lost if gas projects were stalled and public policy created restrictions on new projects: "Australia will lose jobs, cheaper energy, cleaner energy, and future tax revenues."

The advertising campaign highlighted the benefits that APPEA thought the industry created and then warned those benefits would be lost if restrictions on CSG were not removed. What the advertising campaign did not do was discuss any of the concerns that people have about CSG.

Despite the fact that most of the recent restrictions on gas projects had been applied only to CSG, nowhere in the advertising campaign was CSG even mentioned. The industry was keen to talk about the economic cost of lost gas projects but very reluctant to talk about CSG.

This highlights the attitude of the industry to informing the community about CSG. Its preference is to provide as little information as possible. This likely explains why there is so much uncertainty in the general public.

The industry has also not been keen to undertake publicly available research into the environmental effects of CSG. A good example of this is in the area of fugitive emissions. There is concern, both in Australia and overseas, that fugitive emissions from unconventional gas extraction are significantly higher than is currently being claimed. Scientists from the Southern Cross University drove around the public roads at the Tara gas fields to measure greenhouse gas levels and found they were up to three times higher than at nearby districts.⁶

In response, the industry criticised the research because, while it had been submitted, it had not yet been published in a peer-reviewed journal. What the industry did not do was engage with the central claim of the research – that fugitive emissions are far higher than is currently being accounted for. With a complete lack of information on fugitive emissions from CSG, the government has commissioned the CSIRO to conduct a study on the issue.

The industry's decision not to provide research on areas of CSG that the general public has concerns about has created a deficit of information. This lack of information is large enough for the federal government to have committed \$150 million for research into CSG. This includes the CSIRO conducting large research projects into the impact of CSG on water as well as the research project on fugitive emissions.

⁵ APPEA (2013a) *Natural gas is Australia's natural advantage*

⁶ Cubby (2012) *Methane leaking from coal seam gas field, testing shows*

The lack of information has also created a sense of uncertainty around CSG. With the industry unwilling to conduct investigations in areas of public concern there have been calls for moratoriums on further expansion of CSG. Restrictions have been put in place including a water trigger amendment to the *Environment Protection and Biodiversity Conservation (EPBC) Act*.

This amendment means that CSG or large scale mining projects that are likely to have a significant impact on water resources require referral and possible approval by the Commonwealth Environmental Minister.⁷ The new Commonwealth Environmental Minister has recently used this water trigger to order water studies on 47 large CSG and coal mining projects before federal government approval is granted.⁸

NSW has also introduced tighter restrictions on CSG development. This includes a two-kilometre exclusion zone for CSG development around residential areas as well as significant industrial clusters such as horse breeders and wine producers.

When the industry complained about the new restrictions the NSW Energy Minister Chris Hartcher was very clear about what he thought the problem was. He told an APPEA conference: "Industry did not engage in the debate, industry stood back and allowed the debate to happen."⁹ The minister went on to explain that the industry had failed to inform the public and this failure ultimately led to a failure to gain a social licence.

*The government acknowledges that the restrictions it has imposed in September of 2012 and February of 2013 are not easy for industry to live with but the government believes those restrictions are necessary, otherwise there will not be the social licence so important in a democratic society.*¹⁰

The industry's decision to ignore the public's concerns forced the NSW Coalition government, a government not known for placing further restrictions on industry, to introduce the exclusion zones. With the government reacting in such a way you might have expected the industry to try to combat its poor public image by addressing the concerns. The industry could have attempted to build community support through advertising and if it felt that the community concerns were unfounded it could then have conducted research into the concerns in order to allay them.

This hasn't happened. As discussed above, while the industry has launched a multi-million-dollar advertising campaign, it does not mention CSG – nor does it attempt to allay community concern about CSG. It instead simply claims to be able to create large economic benefits and threatens that if restrictions are not removed those benefits will not occur.

The industry also seems to be uninterested in conducting publicly available research into CSG. This seems a surprising strategy – if the industry thinks that the community's concerns are unfounded, allaying those concerns could potentially remove the restrictions on CSG that the industry is concerned about.

Rather than learning lessons from its failure to win a social licence, the industry appears to be intent on continuing to pursue a strategy of keeping a low profile. After the 2013 federal election it gleefully reported that it had conducted exit polls in a small number of electorates where it asked voters if natural gas was an issue for them.

⁷ Minter Ellison (2013) *Water trigger included in Environment Protection and Biodiversity Conservation Act*

⁸ Walsh (2013) *Greg Hunt orders water studies on 47 coal projects in NSW, Queensland*

⁹ Crowe (2013) *'Hard core' Greens hijacking coal seam gas debate*

¹⁰ Crowe (2013)

*Natural gas issues scored zero per cent – not only as a spontaneous issue of concern, but also even when people leaving polling booths were prompted.*¹¹

While the strategy of keeping the public uninformed about CSG is clear it is also interesting to note that the industry straw polls asked about natural gas, not CSG. This is in keeping with the industry's reluctance even to mention what we can only assume it believes to be a politically toxic acronym.

The acronym CSG is so toxic that the NSW government has proposed changing it. Rather than referring to coal seam gas, or CSG, it would instead be called 'natural gas from coal seams'.¹² Natural gas from coal seams might be technically correct but we are left to wonder why the term needed expanding.

The reason might have more to do with presentation than substance. Natural gas does not have negative connotations among the general public, whereas CSG does. Changing the name of course does not address any of the public's concerns about CSG – it simply attempts to lower its profile.

Benefits claimed

The economic benefits that the industry has claimed in its most recent advertising campaign, 'our natural advantage', are quite extraordinary. On the campaign website it claims: "The natural gas industry was responsible for an estimated 100,000 Australian jobs last year."¹³

To fully appreciate this claim we need to put an additional 100,000 jobs in context. Last year according to the Australian Bureau of Statistics (ABS) the Australian economy added an additional 173,537 jobs.¹⁴ If APPEA's claims are true, 58 per cent of all the additional jobs created in the economy last year were in the gas industry. This would be a truly amazing achievement if it were true and at the same time it would probably show that growth in the Australian economy was extremely narrow, being focused almost entirely in the gas industry.

Fortunately we can check such a claim. The ABS does not collect employment statistics just for the gas industry, but it does collect statistics for the oil and gas industry. From the data it can be calculated how many additional jobs were created in the oil and gas industry, but this number is likely to overestimate additional gas jobs since it will also include additional oil jobs. According to the ABS, 9,372 additional jobs were created in the oil and gas industry.¹⁵ This is somewhat smaller than the 100,000 claimed by the industry.

This is not the only time that the gas industry has made incredible claims about jobs creation. In September 2013, at the same time that the gas peak body was making the 100,000 additional jobs claim, James Baulderstone Santos, vice-president for Eastern Australia, wrote in *The Australian*:

*[CSG mining] can secure the more than 15,000 industrial jobs which are dependent on gas supply as a feedstock, and the further of 2.5 million people who are employed by those companies who use natural gas for power. However, it will require putting in place solutions today and not waiting for tomorrow.*¹⁶

¹¹ APPEA (2013b) *Australian voters reject anti-gas campaigners*

¹² Nicholls (2013) *NSW government to wipe out Coal Seam Gas and CSG terminology from documents*

¹³ APPEA (2013c) *Did you know natural gas is a leading player in Australia's economic story?*

¹⁴ ABS (2013) 6291.0.55.003 - *Labour Force, Australia, Detailed, Quarterly, Aug 2013*

¹⁵ ABS (2013)

¹⁶ Baulderstone (2013) *NSW must secure its energy future and restore investor confidence*

Data from the Bureau of Resources and Energy Economics¹⁷ show that 91 per cent of gas consumed by businesses in Australia is used by the mining and manufacturing industries. Census data¹⁸ from the ABS show that these industries employ around 300,000 workers in NSW. The businesses employing the other 2.2 million workers account for less than nine per cent of gas consumption.

So, of the 2.5 million jobs the gas industry is claiming to support, 2.2 million are employed in businesses that use gas only in a very minor way – for example for heating of work spaces. The idea that these businesses would no longer employ people if gas prices rose dramatically is highly unlikely. It is far more likely that these businesses would substitute gas with other forms of energy such as electricity.

Even the 300,000 jobs in manufacturing and mining would not all be extinguished if those industries were forced to pay more for gas. Some businesses, particularly in manufacturing, may struggle and lay off workers. But in the very profitable mining industry it is unlikely to have a large impact on employment. Many businesses in manufacturing and mining may also have the option of substituting different energy sources for gas.

The gas industry is also being somewhat disingenuous about the impending gas shortage and increase in price. The price rise is being caused by the linking of the eastern gas market with the world market by three large LNG export facilities near Gladstone in Queensland. At the moment gas producers in eastern Australia cannot export to the world market where the gas price is significantly higher.

The increase in gas supply caused by new CSG supply in Queensland has made the construction of the LNG export facilities viable. The price increase is therefore a result of our domestic market linking with the world market, and any increase in gas supply in Australia will affect the price only if it is large enough to lower the world price. Increasing CSG in NSW is unlikely to have a significant effect on the world price.

Since the world gas price is substantially higher than the gas price in the eastern gas market, once the export facilities are complete, gas consumers in eastern Australia will have to compete with the rest of the world. The shortage of gas could be more accurately described as a large increase in demand for gas. Once the Gladstone export facilities are complete they will demand large quantities of gas for export overseas.

Conclusion

The gas industry has chosen almost completely to ignore the public's concerns about CSG. When it has engaged with the public's concerns it has simply dismissed them without supplying any real evidence. If the public's concerns are as unfounded as the industry has claimed then it is very surprising that it has made no real effort to produce evidence that shows this to be the case. When the industry has engaged with the public it has chosen to highlight and at times exaggerate potential economic benefits.

The industry's strategy has not been particularly effective. The industry's unwillingness or inability to deal with the public's concerns has led to large restrictions on CSG extraction, particularly in NSW. Despite the failure of its strategy, the industry continues to avoid engaging with people's concerns. It seems unwilling or unable to refute environmental concerns that have been raised about CSG.

¹⁷ BREE (2012) *Energy in Australia 2012*

¹⁸ ABS (2011) *2011 Census Community Profiles*

References

ABS (2011). *2011 Census Community Profiles*, Australian Bureau of Statistics, viewed 11/10/2013

http://www.censusdata.abs.gov.au/census_services/getproduct/census/2011/communityprofile/1?opendocument&navpos=230

ABS (2013). *6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, Aug 2013*, Australian Bureau of Statistics, viewed 11/10/2013

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyCatalogue/35006594EB1126B2CA257132000F9189?OpenDocument>

APPEA (2013a). *Natural gas is Australia's natural advantage*, Australian Petroleum Production and Exploration Association, viewed 11/10/2013

http://www.appea.com.au/media_release/natural-gas-is-australias-natural-advantage-campaign-launch/

APPEA (2013b). *Australian voters reject anti-gas campaigners*, Australian Petroleum Production and Exploration Association, viewed 11/10/2013

http://www.appea.com.au/media_release/australian-voters-reject-anti-gas-campaigners/

APPEA (2013c). *Did you know natural gas is a leading player in Australia's economic story?* Our natural advantage website, viewed 11/10/2013

<http://www.ournaturaladvantage.com.au/>

Baulderstone, J (2013). *NSW must secure its energy future and restore investor confidence*, The Australian, viewed 11/10/2013

<http://www.theaustralian.com.au/business/opinion/nsw-must-secure-its-energy-future-and-restore-investor-confidence/story-e6frg9if-1226708587960>

BREE (2012). *Energy in Australia 2012*, Bureau of Resource and Energy Economics, viewed 11/10/2013

<http://www.bree.gov.au/documents/publications/energy-in-aust/energy-in-australia-2012.pdf>

Crowe, D. (2013). *'Hard core' Greens hijacking coal seam gas debate, says Chris Hartcher*, The Australian, viewed 11/10/2013

<http://www.theaustralian.com.au/national-affairs/hard-core-greens-hijacking-coal-seam-gas-debate-says-chris-hartcher/story-fnaxx2sv-1226652012955>

Cubby, B. (2012). *Methane leaking from coal seam gas field, testing shows*, Sydney Morning Herald, viewed 11/10/2013

<http://www.smh.com.au/environment/climate-change/methane-leaking-from-coal-seam-gas-field-testing-shows-20121114-29c9m.html>

Haigh, D. (2013). *Building a social licence to operate in the natural resources sector*, PitneyBowes, viewed 11/10/2013

<http://pitneybowes.com.au/docs/Australia/Position%20Aug.Sept%202013.pdf>

KPMG (2013). *The Community Investment Dividend: Measuring the value of community investment to support your social licence to operate*, KPMG, viewed 11/10/2013

<http://www.kpmg.com/AU/en/IssuesAndInsights/ArticlesPublications/documents/community-investment-dividend-social-licence-resources.pdf>

Macdonald-Smith A, Ludlow, M (2013). *Hartcher defends stricter CSG rules*, The Australian Dairyfarmer, viewed 11/10/2013

<http://adf.farmonline.com.au/news/nationalrural/general/news/hartcher-defends-stricter-csg-rules/2659227.aspx>

Minter Ellison (2013). *Water trigger included in Environment Protection and Biodiversity Conservation Act*, Minter Ellison, viewed 11/10/2013

<http://www.minterellison.com/publications/Water-trigger-included-in-Environment-Protection-and-Biodiversity-Conservation-Act/>

Nicholls, S. (2013) *NSW government to wipe out Coal Seam Gas and CSG terminology from documents*, Sydney Morning Herald, viewed 11/10/2013

<http://www.smh.com.au/nsw/nsw-government-to-wipe-out-coal-seam-gas-and-csg-terminology-from-documents-20130916-2tuzq.html#ixzz2f6LMd0Ze>

Ravens, T. (2013). *NSW farms 'already protected from CSG'*, Sydney Morning Herald, viewed 11/10/2013

<http://news.smh.com.au/breaking-news-national/nsw-farms-already-protected-from-csg-20130403-2h6ld.html>

Vote Compass (2013). *Australians back restrictions on foreign ownership, CSG*, ABC online, viewed 11/10/2013

<http://www.abc.net.au/news/2013-08-23/vote-compass-foreign-ownership-csg/4905794>

Walsh, N. (2013). *Greg Hunt orders water studies on 47 coal projects in NSW, Queensland*, ABC News Online, viewed 11/10/2013

<http://www.abc.net.au/news/2013-09-26/hunt-calls-for-water-studies-before-approving-coal-projects/4983984>