

# Report on community and stakeholder attitudes to onshore natural gas in Victoria

Prepared by the Independent Facilitator  
The Primary Agency  
20 April 2015

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## Foreword

In approaching this task, The Primary Agency has maintained a disinterested and independent stance regarding onshore natural gas in Victoria, having no previous experience of the industry.

The Primary Agency has, however, extensive experience of engaging rural and regional communities and has well developed methodologies for understanding community and stakeholder views.

Central to this approach is the notion that to genuinely engage you need to genuinely care for, and respect, the views of the community and all stakeholders.

This style of engagement is ultimately more efficient and effective as it allows for open and extensive consultation which leads to a better understanding of community views and the rationale underpinning those views.

The task was to carefully listen and faithfully record all views expressed and distil them into a report that is useful for decision makers.

It was noteworthy that everyone involved presented their views freely and genuinely.



Mick Maguire

Managing Director  
The Primary Agency

## The team

The consultation process was an extensive task, the conduct of which involved many members of The Primary Agency team.

Noteworthy for their contribution to the success of the project are:

Ms Keely Chapman  
Ms Jill Chapman  
Mr Ross Davies  
Ms Margie Read Flavell  
Mr David Fleming  
Dr Bruce Kefford  
Ms Pauline Lih-Cham  
Mr Mark McDonald  
Mr John Naughtin  
Ms Victoria Penko  
Mr Pete Smith  
Mr Richard Surwillo  
Mr Mal Wildes  
Mr Des Williams  
And, Dr Bill Callaghan (market researcher)

The Primary Agency contact:  
Ms Margie Read Flavell  
email: [tpa@theprimaryagency.com](mailto:tpa@theprimaryagency.com)



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## Executive summary

1. The Primary Agency was engaged as an independent facilitator to conduct a community and stakeholder consultation process to discuss and seek community input on issues surrounding the potential of an onshore natural gas industry in Victoria. The Primary Agency sought to capture the issues and views of Victorian communities through two approaches:
  - an extensive engagement with some 2000 community attendees at open days, key stakeholder meetings, discussion groups and community panels;
  - a quantitative survey of a stratified sample of 960 Victorians which could differentiate the views of respondents in the areas most prospective for gas resources in Western Victoria and Eastern Victoria, rural Victoria and metropolitan Melbourne.

There was a high level of engagement in the consultation process. Many individuals and companies had strong views which were often well informed and, most participants were interested in getting more information on the subject.

2. The **key question** of the quantitative study was the likelihood of supporting the introduction of an onshore natural gas industry in Victoria. Some 29% of respondents indicated support for the industry (either definitely would or likely to), while 27% of respondents indicated that they do not support the introduction of an onshore natural gas industry. The remaining 44% of respondents indicated they were 'undecided' or 'don't know', which is a high figure. There were only slight differences between metropolitan Melbourne and rural respondents.
3. **Typical viewpoints** can be linked to each of the following three cohorts. The support cohort often presents as people with experience in the industry. They foresee an export orientated industry with the commercial and household sectors making the necessary adjustments. They see benefits greatly exceeding costs, landscape change no more intrusive than other uses, an industry with substantial experience in managing environmental risks, and a good track record in the management of landholders.

The **do not support** cohort fears the industry will profoundly change the landscape and natural resource base for the worse, emphasising ground water depletion and the potential for surface water pollution, land subsidence, the lack of an adequate benefit cost analysis, landscape amenity degradation, and uncertainty about regulatory effectiveness.

The **undecided/don't know** cohort can be quite well informed but generally they feel that their own knowledge, and perhaps the knowledge actually available, is inadequate to fully assess the issues. When asked to comment on categorical statements about the onshore natural gas industry, the undecided/don't know response could represent anything from an astute judgement of the current state of knowledge through to a cautious assessment of partial knowledge through to a recognition of limited knowledge or even ignorance. This cohort is the largest of the three cohorts. For many significant questions more than 50% of respondents are in this cohort.

4. The **attitudes of respondents** to the major issues underlying onshore natural gas industry development were determined in the survey by presenting respondents with definite statements and seeking responses across a 'strongly agree' to 'strongly disagree' spectrum. For example, one statement was 'the risks of contamination to surface water from onshore natural gas activities are unacceptably high'. The pattern of responses to these issues questions was often broadly similar to the responses to the key question. The responses are presented at length in this report. Two notable responses were: the need for government control of onshore natural gas activity (70% agree), and the desire for more information (55% interested).

5. **Community attitudes in potentially affected areas** are more strongly opposed to an onshore natural gas industry than in other areas.

Opposition to an onshore natural gas industry (unlikely to support/definitely would not support) was 46% in the survey sample in the areas most prospective for onshore natural gas as against 27% in the metropolitan sample. The main reasons for this were a greater level of disagreement that the benefits outweighed the costs, and a higher level of concern that the risks to underground water supplies posed by the development of an onshore natural gas are unacceptably high.

There was a noticeable difference between the Western Victorian prospective gas area and the Eastern Victorian prospective gas area in support for the industry. For almost all of the attitudinal criteria examined, the responses from the western area were less negative towards industry development than those from the eastern area.

6. The **attitudes of key stakeholders** to an onshore natural gas industry were mixed but mostly negative:

The Victorian Farmers Federation position is essentially positive, seeking development subject to: free choice for landholders, adequate management of natural resources, good regulation and fair treatment of landholders. They seek a number of changes to the current situation, most notably, a power of veto for landholders not wanting exploration or development on their land.

The **dairy industry** expressed concerns about an onshore natural gas industry, fearing negative perceptions in sensitive markets would generate significant risks to markets and milk production. Other concerns were potential contamination of surface water and ground water and its repercussions on milk quality, and the capacity of regulators to manage onshore operators well enough to protect dairy industries.

Dairy farmers saw some benefits to landholders, but were concerned about the impact of onshore natural gas activities occurring on other farmers' properties on their own farming operations. There were additional concerns about companies gaining access to properties against the wishes of landholders.

**Grain growers'** attitudes were largely determined by the potential for an onshore natural gas industry to affect the supply or quality of ground water. If there is no possibility of any impact on water supplies, then onshore natural gas industry development was supported, but if there is any possibility of an impact on ground water then gas industry development was not supported.

**Commercial gas users.** A policy change is urgently sought to allow the orderly and managed marketing of gas to the export and domestic markets, to increase competition and transparency in the gas supply market and/or reduce excessive supplier market power. Some seek interventions that achieve domestic gas prices closer to the traditional long term trend level. Others seek a managed, effective and more transparent gas market similar to that for electricity.

Commercial gas users are concerned that the impacts of higher gas prices on industry competitiveness and domestic users will be felt far more rapidly than any impact from the development of an onshore natural gas industry.

7. The **key points** to emerge from the quantitative survey are: a large proportion of the Victorian community (44%) has not adopted a definite position; that the level of opposition in the rural areas with the potential to be affected is high (46%); that there are strong expectations that government will strictly control a potential industry (70%); and, that there is a strong interest in learning more (55%).

## Background to the study

For more than four decades Victoria has had an abundant supply of 'conventional' natural gas from offshore, providing cost-effective energy for domestic and commercial uses.

Victoria now has the highest penetration of natural gas in industry and households of any State of Australia. This source of natural gas has been sufficient to also provide for much of Australia's needs via a pipeline linking Tasmania, South Australia, Victoria and Queensland.

The offshore location of this industry is remote from the general population and consequently has had a limited presence locally. Reserves of gas offshore are now declining, although more than 30 years' of supply is estimated to be available, and exploration continues.

Australia has an export focussed market stance for natural gas (and other industries). Where export of gas has been possible, such as Western Australia, domestic users face international gas market price movements.

Export of gas has not previously been possible from eastern Australia and the gas price has been lower and quite stable as a consequence. However, gas processing and shipping developments in Queensland (Qld) mean gas can now be exported as liquefied natural gas (LNG) from eastern Australia and that changes to domestic gas prices could be substantial.

This appears to be happening in the market for medium and long term contracts, but not in spot prices for gas (due to the short term availability of 'ramp up' gas from Queensland gas fields). The effect of gas exports on long term prices may be significantly affected by recent falls in global oil prices and demand for LNG in importing countries.

Overall global demand for natural gas demand is growing, although this is not the situation for domestic demand on the Australian east coast. The growing demand and higher returns from export markets, combined with extensive experience of industry development in other countries, has stimulated interest in exploration and development of the onshore natural gas industry in Australia.

The onshore natural gas industry is well established in other countries (particularly the USA); there is a long history of production from Australia's Cooper Basin, which straddles both South Australia (SA) and Queensland (Qld); and, there has been further, more recent, development in Qld and New South Wales (NSW), all of which provides insights into its operations and characteristics.

Onshore natural gas is not produced in Victoria and it is not known if there are commercially viable resources, although some exploration has occurred in past decades. A moratorium on further exploration and the practice of hydraulic fracturing was put in place in 2012 and extended until at least June 2015, pending State government consideration of a number of studies and community consultation (reported here). In January 2015, the Victorian Government announced that the moratorium would remain in place pending the establishment of a Parliamentary Inquiry into onshore unconventional gas and the Government's subsequent response to the Inquiry's findings.

Certain regions of Victoria (e.g. Gippsland and the Otway Basin), have underlying geology which is potentially suitable for some forms of onshore natural gas, notably gas trapped in sandstone (tight gas) or in shale (shale gas). Gas from coal deposits (coal seam gas) is also possible but its potential in Victoria may not be as significant as in other States of Australia.

These regions are in rural Victoria; they are relatively closely settled, often very productive, have high amenity value and support a range of industries including food and agriculture, tourism, recreation, as well as aluminium smelting, coal mining, power generation and associated service industries.

Agriculture in Victoria is particularly intensive with 26% of Australia's food and agriculture being produced from just 3% of the nation's arable land. Victoria dominates in a number of these industries including dairying, prime lamb production and certain crops which generate high returns per hectare.

Victoria's more extensive use of natural gas as an energy source in industry and households sets it apart from other states.



## The onshore natural gas community consultation process

In April 2014, The Primary Agency was engaged as Independent Facilitator of an extensive community consultation program aimed at gaining a deeper understanding of the Victorian community's issues and range of views about onshore natural gas, particularly in those areas where the geology suggests onshore natural gas might be present.

### Consultation objective

The Primary Agency's objective throughout the consultation has been:

*'To capture the issues and views of Victorian communities with regards to onshore natural gas and report those faithfully to government.'*

The consultation was designed in two distinct phases:

#### Phase One: Consultation

*This initial stage of our program reached into communities in which onshore natural gas is likely to/may be present (primarily through regional open days and stakeholder and community meetings in Gippsland, South West Victoria and some areas of Northern Victoria).*

#### Phase Two: Validation

*We then aimed to validate, further explore and deepen our understanding of the perspectives we had heard, in regionally based discussions, through state-wide quantitative market research and in two specially convened community panels.*

The consultation was designed to be accessible to all those interested in taking part. We note the significant efforts that many Victorians made to volunteer their time and effort to meet with us and discuss their perspectives of onshore natural gas. We thank everyone who has contributed to this important process.

Our role as an Independent Facilitator in this consultation has been critical in gaining the trust of Victorian communities and stakeholders. The Primary Agency has no prior involvement in the mining and extraction industries. Moreover, we have been vigilant in our efforts to maintain a neutral disinterested perspective, including in our consultation methodologies, our questioning and in all communications. Importantly, we have been extremely careful not to coach or lead opinion in any direction.

## Consultation activity

### Phase One

The first phase of the consultation process involved actively listening to the community's issues and views about onshore natural gas.

#### Open Days

Initially, 14 Open Days were planned to take place in geographical areas possibly prospective for onshore natural gas. This number was later extended to 16 Open Days to ensure that reasonable access had been provided to everyone in the targeted consultation areas.

We intended that everyone within these areas could attend an Open Day within a two hour drive. Sessions took place between June and August from 2pm until 8pm each evening.

The Open Days, advertised in local media, provided a chance for community members to meet with facilitators and then, if they wished, talk directly with staff (e.g. hydrologists and engineers) from the Department of State Development, Business and Innovation (now the Department of Economic Development, Jobs, Transport and Resources). The schedule of Open Days is shown in Appendix 1.

- More than 1,500 people expressed their views as part of the Open Day program, as outlined below:
- more than 700 participants in Warragul, Sale, Bairnsdale, Yarram, Inverloch, Mirboo North and Traralgon
- more than 650 participants in Torquay, Casterton, Colac, Terang and Heywood
- more than 100 participants in Cullulleraine and Murrayville
- more than 70 participants in Wangaratta and Numurkah

Wherever appropriate, before each Open Day, independent facilitation staff held meetings with both local government and representatives of community groups. These included 14 meetings with shire council representatives and 15 with community groups, including those most vocal in their opposition to onshore natural gas development in Victoria.

#### Stakeholder meetings

Facilitators also had discussions with parties or individuals identified as being significantly interested in, or impacted by, any future onshore natural gas development in Victoria, to ensure stakeholder and sectorial interests were fully captured.

These discussions lasted one to two hours. Two lead consultation facilitators attended each meeting. A schedule of these discussions is shown in Appendix 2.

### Phase Two

The second phase of the consultation involved validating, further exploring and deepening our understanding of the perspectives we had heard.

## Community and stakeholder discussions

Community and stakeholder discussion groups, held in late 2014, were designed to ensure that the consultation had captured the broadest range of views from all sectors of the community.

Preliminary assessment of feedback from the Open Days showed that they reflected a broad cross-section of Victorian communities.

However, it was clear that the Open Day process had not captured enough qualitative data from commercial farmers to accurately characterise that sector. Hence, of the discussion groups held across the State, a number were specifically intended to collect commercial farming operators' views.

Some of the discussion groups were used as a means of revisiting people who had attended the open days and community meetings, to ensure that we had accurately recorded and understood emerging themes and arguments. We were then able to better understand the basis of differing perspectives.

## Community panels

The Primary Agency convened two community panels in October – one for Gippsland and another for South West Victoria – to further explore the themes and insights drawn from the broader community consultation process.

These panels consisted of organisations and advocates representing interest groups and communities. Each panel comprised participants whose views broadly mirrored the diversity of community and stakeholder views across the region, including those with strongly differing perspectives about onshore natural gas.

The Primary Agency, as Independent Facilitator, selected participants by invitation. Participants agreed to a 'set of behaviours' that ensured respect for all views within a forum which would be unlikely to occur in any other scenario. Discussions were effectively treated as being 'in camera'.

The Primary Agency sought nominees from key stakeholder groups, prior participants and those who showed significant interest in the earlier consultation process, notably the Open Days. Stakeholders included environment, advocacy, community, industry, local government, landholders, tourism and natural resource management agencies.

Considerable care was taken to assemble each panel to ensure a comprehensive coverage of sectorial views.

The community panels attempted to:

- explore themes and insights which emerged during the broader consultation process.
- explore divergent views on a range of subjects relating to onshore natural gas. These included perspectives on general water and environmental issues, science and technology, energy policy, regulation and the coexistence of community, landholders with any potential onshore natural gas industry.
- identify and confirm areas where different stakeholders hold common and contrasting views. This included having regard to possible risks and risk mitigation measures, as well as any possible residual risks posed by a potential onshore natural gas industry.

No provision was made for observers from government or media within these panels, to ensure a confidential and secure forum for issues to be explored.

## Quantitative market research

In addition to the qualitative feedback provided by the community during the consultation process, a fully statistically valid quantitative market research study was conducted and is reported here.

# Community views on the development of onshore natural gas

## Part A – The qualitative study

The qualitative component of this report is drawn from the extensive engagement of the Primary Agency with community attendees at open days, key stakeholders, discussion groups and the community panels.

The overwhelming impression created was that the participants represented their views with conviction. Most were very considered in their views and a number were quite passionate, describing very strong feelings about particular issues.

For what is a technically complex topic, many participants were well informed about the processes of onshore natural gas and the related issues, having drawn information from a range of sources (literature, media, web, academics, direct industry experience and specific interest groups). Others readily admitted limitations to their knowledge of the field. Most people displayed a keen desire to understand more.

This issue has galvanised the interest of people who described themselves as ‘never having been involved in any community issue before’ and quite a number also insisted that they were not ‘greenies’. A theme expressed consistently by participants was great appreciation for the opportunity to be heard and the hope their views would be considered genuinely by authorities.

## Community views about onshore natural gas

The views expressed by some 2000 participants and the rationale behind those views is consolidated here. This is made possible because the community essentially divides into three cohorts: those who do not support the development of onshore natural gas for Victoria, those who support this development and those who are yet to form a definite position and are undecided/don't know.

The level of community support on this and many other issues is discussed in detail in the following chapter on the quantitative analysis, but in overview almost half the community are in the undecided/don't know cohort, and the other half is split between do not support and support.

## Characteristics of the *do not support* cohort

People in this cohort fear the industry will profoundly and permanently change the landscape, natural resource base, structure of the economy and community character for the worse.

This view is centred on natural resource and local or regional community considerations. Benefits from onshore natural gas are perceived to be limited and when set against the substantial risks and costs provide little net benefit if any overall. Further, the benefits and costs are not seen to be distributed equitably, with the benefits accruing mainly outside the region, while the costs are mainly borne inside the region.

The extensive range of potential costs and risks – drawn from previous experience elsewhere and case studies – when combined with a low appetite for risk, leads to a strong conviction that onshore natural gas is a thoroughly bad idea for Victoria now, and probably in the future. This strong belief leads to surprise and/or suspicion of those with contrary views. Authorities – particularly politicians, government agencies, scientific organisations or the industry itself – that countenance the possibility of an onshore natural gas industry in Victoria are often criticised for a lack of understanding, capability or independence, due to a financial or commercial stake in the development of the onshore natural gas industry.

## Perspectives of those who *do not support*

### Policy stance

The export orientation of the market arrangements for onshore natural gas in Australia is seen to expose the eastern seaboard's domestic gas market to international price movements in the future (most likely upwards). Current policy does not favour any gas reservation for domestic market purposes and, as a consequence, there is no expectation that the development of onshore natural gas will deliver lower prices in Victoria.

The promotion of onshore natural gas development is inconsistent with other government policies to promote regional agriculture, food and tourism industries, given the substantial loss of landscape amenity that will occur.

### Need for development

The notion that natural gas should be further developed is challenged on the grounds that the existing offshore reserves are adequate for at least 30 years and this is sufficient time to move to renewable energy sources, particularly if the government investment is redirected. It is claimed that this would help mitigate climate change effects and create more jobs than the onshore natural gas industry.

Some feel that onshore natural gas should be kept as a reserve for future base-load energy production, allowing more time to explore the risks and also potentially increase the value of the resource if it was needed and extracted later.

### Benefits and costs

An extensive range of costs and risks are characterised, while the scale and nature of the benefits are challenged. This leads to the overall view that the potential costs greatly exceeded the benefits.

Furthermore, the benefits are seen to accrue over a shorter time (decades) and to a few, largely living outside the region. The costs however will generally accrue over a much longer time (generations) to those living within the regions. This segregation of benefits from costs in time and space is seen as very unfair.

The anticipated increases in gas price are seen as a function of a need to meet international contracts and Australia's consequent exposure to the price traded on world markets. Lower domestic gas prices, as a consequence of increased supply from onshore natural gas, is not considered a reality.

The benefit/cost analysis undertaken to-date has been inadequate, estimating some of the tangible benefits and only some costs. Many other often less tangible costs, including collateral impacts to other industries and changes within communities are overlooked or minimised. The potential changes to the character of the regional economy and community needs to be considered carefully in any benefit/cost analysis.

The tendency, in the past, for the industry to overestimate returns was also mentioned, highlighting the need for adequate risk/return and sensitivity analyses.

The basic resources that are crucially important for regional industries such as agriculture and tourism (e.g. land, water, air and the amenity of the environment) will be reduced in quality and quantity affecting their viability and productivity and significantly reducing the net benefits.

The perceived quality and reputation of regional products and product brands based on the existing features of the region (e.g. clean and green) will be eroded if the landscape becomes industrialised. This will reduce their value and potentially deny access to higher value markets. This is a particular concern for milk products.

Certain forms of insurance are also reported not to be available to landholders hosting onshore natural gas activities.

### Landscape change

The onshore natural gas industry in other locations is seen as having a very substantial and long lasting footprint in both its development and operational phases, as well as after extraction is complete.

The industrial nature of onshore natural gas is in stark contrast to many of the current land uses (e.g. agriculture, tourism, residential, amenity), changing the landscape it occupies profoundly.

In the presence of onshore natural gas, other land uses are significantly affected, devalued and/or displaced and, as a result, a compatible co-existence with other land uses is not possible.

Once any onshore natural gas activities begin, even on a small scale, impacts on the surrounds are immediately felt and further onshore natural gas development is seen as inevitable as other land uses are devalued.

Negative impacts cited include land lost to other important uses, impacts on amenity and lifestyle, noise, visual impacts, increased heavy traffic, road damage, increased fire risk and private or public asset devaluation.

### Natural resources

The industry is very intrusive, often requiring access to private land, deep drilling and large volumes of water.

There is deep concern the water sources will be diminished in quality and availability for other uses, as hydraulic fracturing (fracking) requires large volumes of water and the use of chemicals. Some of the water used is returned to the surface containing additional salt and other substances from underground, to be stored at the surface where it remains a threat to land, water courses, stock and wildlife.

Deep drilling and fracking affects the structural integrity of the subsurface environment, potentially leading to:

- fugitive gas escaping to the air, adding to greenhouse effects, increasing fire risk and health impacts
- fugitive gas escaping to the air, adding to greenhouse effects, increasing fire risk and health impacts
- increased seismic activity in areas of geological instability
- potential contamination of underground aquifers with fracking fluids
- loss of access to ground water for other uses.

As evidence that these concerns are real, particular cases in United States, Queensland or New South Wales are used to highlight the risks and impacts. In Victoria, aquifer depletion in the Yarram region, as a consequence of offshore gas extraction and coal mining, is well known. This has also raised concerns about potential land subsidence.

As these impacts can extend beyond the boundaries of a landholder, externalities can be created for others not immediately involved in onshore natural gas

## Character of the regional economy

While there are industrialised parts of these regions, most of the landscape is devoted to food and agriculture, tourism, services and residential living. An onshore natural gas industry of any scale is expected to substantially affect the current mix of activities in regional economies as onshore natural gas grows and other activities decline or change.

## Character of the regional community

Just as the economy changes so too does the community that supports it. People once attracted to a more bucolic existence may now be facing a more industrialised environment that substantially affects their way of life and appreciation of the surrounds. The makeup of the community will also change to reflect those who are attracted to the changed environment and those who choose to stay.

## Capacity to understand and manage risks

There is a concern that with this relatively new industry, the science and management experience is insufficient to be able to predict, with any certainty, the potential risks and their management.

Some government agencies and scientific authorities are described as lacking sufficient independence as a result of being under political influence or being compromised by funding arrangements with the industry. There is also a strong focus on the gaps in scientific knowledge rather than the extent of the existing knowledge.

There is a very low risk appetite for onshore natural gas, with assurances or guarantees being sought that negative events will not occur leading to calls for the 'precautionary principle' to be applied before proceeding.

## Capability to manage onshore natural gas impacts

There is a strong focus on the risks associated with the industry and the capability of regulators to mitigate them through regulation or industry codes of practice. This concern has three distinct aspects: the potential to design effective regulations for this industry, the capability of the regulator(s) to ensure that industry complies with regulations, and the behaviour of industry operators. More specifically, the capacity of the regulators to manage the development and operations of the industry is regularly questioned in regard to:

- regulatory powers and their stability over time, given the capacity for governments to change them
- low and declining regulatory resources which are seen as inadequate relative to the scale of the task
- poor industry reputation and past performance (reported cases of industry poor practice or where accidents have occurred are seen as regulatory failure and point towards other possible failures)
- industry codes of practice which are not taken seriously as they are voluntary and cannot prevent instances of bad practice
- the international and footloose nature of some companies and the inability to enforce compliance if the company becomes bankrupt
- the inadequacy of rehabilitation bonds to cover the full range and costs of rehabilitation over the extended period of time during which they can emerge

- the possibility of risks and liabilities being transferred from the companies to landholders, the community or the State before their effects emerge

unforeseen risks and liabilities emerging after the event, citing that many landholders regret agreeing to the onshore natural gas arrangements after their impacts are clearer.

### A sense of fairness

The absence of a 'power of veto' for landholders in Australia to prevent exploration and mining on their land often surprises landholders and adds to a sense of an imbalance of power in their negotiations with industry (who can refer the compensation amount to VCAT for resolution).

There is a widespread perception that landholders can be bullied in the negotiations with industry, disadvantaged in the compensation for loss of production, and risk inadequate restoration after the event. (Note: Minerals are owned by the state on behalf of the whole community with compensation payable for access under established Victorian law. Australian landholders do not receive royalties from onshore natural gas whereas they do in some states of the USA.).

### Community knowledge and consultation

This do not support cohort feel the wider population is much less informed about onshore natural gas and so, are consequently less concerned than communities more directly affected. Previous attempts by industry and government to inform and engage the community are described as 'non-existent' or very limited. However the information from interest groups has usually been welcomed and has been influential in shaping views.

### Health

Instances of moderate to severe physical and mental health issues associated with onshore natural gas are described, drawing from other countries, Queensland and New South Wales. These include reports of skin, eye, respiratory and gastrointestinal inflammations plus effects on the nervous, immune and cardiovascular systems as well as hormonal imbalances, possible cancers and genetic mutations.

### Characteristics of the *support* cohort

People in this cohort typically have extensive and longstanding experience in the oil and gas industry, may invest in it and/or may be or have been employed in it.

They have a relatively detailed understanding of the industry and draw on experiences from the offshore gas industry and on shore exploration over more than four decades in Victoria. This is often combined with knowledge of the onshore gas industry in other countries and other states in Australia.

Given these experiences, they see high potential in onshore gas for Victoria, Australia and globally, with flow-on benefits to other industries and the local and wider community.

This cohort sees large potential benefits that will significantly outweigh the costs of a well-managed onshore natural gas industry. This view is underpinned by a greater appetite for risk and a belief that the industry can manage whatever risks might present.



The extensive experience of the industry and its claimed good practice over decades supports a basic conviction that developing onshore natural gas in Victoria is a thoroughly good idea. Those with contrary views are regarded as not understanding the true nature of the industry or as anti-development activists.

However, this cohort also recognises that the industry is often poorly perceived in the wider community, both in Australia and internationally. The Gas Market Taskforce report noted that gaining a 'social licence to operate' was probably the biggest single constraint on industry growth, both in Australia and internationally.

The industry sees roles for government in particular and also itself in managing this issue. It is noteworthy that landholders with direct experience working with gas companies in Victoria are reported to have a positive view of the companies involved.

The present consultation is strongly supported, but there is also frustration with the moratorium on onshore natural gas development in Victoria and the uncertainty in government policy, which is believed to have constrained investment.

## Perspectives of those who support

### Policy stance

Onshore natural gas is perceived as a very important source of cleaner energy for both manufacturing and domestic uses.

The support cohort generally has a good understanding of Australian gas marketing arrangements and the implications of export-based pricing for gas prices domestically.

There is no support for the reservation of gas for the domestic market despite the predicted increases in price that are likely to follow, and the corresponding impact on manufacturing and households once the east coast of the country enters the world market. Rather, price increases for manufacturers and household users are seen as an inevitable consequence of a foreseeable and necessary adjustment to new market circumstances.

### Benefit to the economy and community regionally

The supportive cohort believes the benefits greatly outweigh the costs to the Victorian community and that this is often not understood by the community. The community is held to be unaware how greater supply could reduce gas prices in their favour, and of holding an exaggerated concept of the adverse effects of an onshore natural gas industry.

The development of the Queensland industry (Chinchilla, Toowoomba and Roma) over the past 10 to 30 years, and development of the industry in the USA, are all cited as positive case studies for how an onshore natural gas industry might unfold in Victoria. These Queensland towns are said to have gained substantially overall, with new jobs, water for agriculture and the environment, better infrastructure, improved services for the community, a more viable local economy and a more vibrant community.

The distribution of benefits to landholders is claimed to be fair and reasonable, as illustrated by the fact that 4,000 holes have been drilled in Queensland without recourse to legal action. The compensation negotiated has more than covered landholders' loss of income, and landholders are said to be happy with the arrangements.

## **Landscape change**

The industry believes that best practice developments are much less intrusive, and no more so, than many other land uses. The amenity of the environment in some areas of Queensland has been improved by the increased availability of clean irrigation water from treated recovered water.

## **Natural resources**

There are more than four decades of offshore gas experience in a more difficult environment than onshore for gas capture, and a proven track record of good industry performance. The environmental risks are well understood and well managed, with newer technologies further reducing risks.

More than 40,000 holes having been drilled in Victoria over past decades (many for coal) which provides extensive experience of, and evidence for, the reliability of drilling practices. Further, drilling for gas penetrates far deeper than the aquifers used as water sources for human, agricultural and industry uses, reducing risks of contamination.

The gas industry believes that the Queensland experience with onshore natural gas over recent decades has shown few negative environmental impacts and positive benefits from increased irrigation. The potentially adverse environmental aspects of an onshore natural gas industry need to be assessed against the impacts of decades of other land uses, such as the fertilisers, pesticides and weedicides used in agriculture.

## **Capacity to understand and manage the risks**

The science in this field is excellent, long standing and exchanged worldwide. With continued development globally, improvements in technology (e.g. in fracking) are further reducing already low risks. If the extent of this scientific knowledge, experience and track record was more widely understood by general community, many concerns would be reduced.

## **Capacity to manage onshore natural gas impacts**

Industry regulation is extensive and appropriate. When this regulation is combined with industry codes of practice and the good internal processes of individual companies, it effectively protects the community and its assets while allowing the industry to develop.

## **A sense of fairness**

Companies in the onshore natural gas sector highly respect and value their relationships with landholders, taking particular care to develop understanding, reach agreement and provide follow-up after their activities have been completed.

No attempt is made to force the issue with landholders or to use the legal pathway available via the Victorian Civil and Administrative Tribunal. Some companies make efforts to build relationships with local communities by investing in a range of activities, such as sponsorships of sporting clubs.

## Community knowledge and consultation

Previous government attention to community education and consultation is seen as partial, slow, insufficient and ineffective and as having contributed to the high level misinformation within the community.

The community concerns being expressed can often be attributed to this high level of misinformation. Similarly, company investment in community education resources and programs over the years has been inadequate and has produced mixed results, so that all parties believe more engagement and better understanding is required.

## Health

Companies acknowledge that they owe a duty of care to landholders and the wider community in developing onshore natural gas resources. They also point out that they have similar legal responsibilities to their staff, many of whom would have much higher exposures to any operating risks than landholders or the community.

Companies see no increased incidence of health issues as a consequence of onshore natural gas operations (e.g. the South Australian operations). However, there are reports of health issues that are considered to be unrelated to industry activities, and claims to the contrary are not supported by credible medical authorities.

## Two world views

Both the do not support and support cohorts claim to draw on a good information base and both can provide substantial supporting evidence.

They are each convinced they are right and that they act in 'the community interest'; both are suspicious of the motivations of those with contrary views.

These two cohorts hold different 'world views', which draw on different value sets, knowledge and experiences. In this respect the divergence of opinion about onshore natural gas development has similarities to other conservation versus development issues within the Australian community.

A striking example of these two viewpoints is the different perspectives on the development of the onshore natural gas industry at Chinchilla in Queensland.

Those not supportive of onshore natural gas characterise industry development in Chinchilla as a disaster. They see a once bucolic and productive rural landscape that has been utterly destroyed to make way for an industrial landscape, many farmers have been forced to leave, and others are trapped on unsaleable properties, while the farmers who opted for the development now regret it.

Those supportive of onshore natural gas see an entirely different picture: a once moribund agricultural landscape has been rejuvenated and transformed by the onshore natural gas industry with increased and more diverse economic activity, improved water supplies for natural resources and agricultural uses, and better community services.

The provision of more, high quality information is unlikely to shift the viewpoint of either cohort in any substantial way.

## Characteristics of the *undecided/don't know* cohort

The report of the quantitative survey (reported here) makes the distinction between an undecided group who responded 'may or may not' or 'neither agree or disagree', and a 'don't know' group who responded 'don't know'. It is important to recognise that these are two separate groups, even though for purposes such as the development of government policy or for convenience in discussion they can be treated as one group, as is often the case in this report.

It is significant that on many important questions these two groups, when combined, are the largest cohort within the community, and as such the undecided/don't know response must be given adequate attention.

The undecided group see some merit in the perspectives emerging from the two polarised groupings within their community. People in this cohort may range from quite well informed through to not very well informed, but they generally feel that their knowledge is inadequate to fully appreciate the issues and they are keen to learn more.

Few actually possess a comprehensive knowledge of the issues, but this group is more aware of knowledge deficiencies and is usually less articulate as a result. They worry about the polarisation of views within their communities and do not know who to believe, often turning to authorities for more reliable information.

They are more accommodating of diverse sources of information and more accepting of the role of authorities, such as scientific and government agencies. And at this point, they are uncertain about whether and how an onshore natural gas industry might be developed.

Some within this undecided grouping have an open but conditional stance on the development of the onshore natural gas industry in Victoria. They focus on how the industry might be allowed to develop and the controls that would be necessary to mitigate risks. They have some faith that government could achieve this, but have a general sense that more needs to be done to make this industry 'safe'.

Others are concerned primarily with environmental, water and amenity concerns but are nevertheless very conscious of the need for local job creation and development opportunities.

Greater knowledge often assists in reaching decisions in these situations.

The don't know group is likely to include those who are less engaged in the issue, are less informed or uninformed on the issue, and less interested because of other concerns. However, don't know is a rational alternative to undecided where the question requires knowledge which is not available at present or limited in scope.

Thus, for the views expressed to "the risks to underground water supplies from onshore natural gas are unacceptably high", there was a 39% don't know response and 20% undecided response, which is so high it is indicative of a community response that these risks cannot be assessed, rather than simply a lack of interest or capacity to assess them. The provision of more high quality information might assist this undecided/don't know cohort in taking a more definite position one way or the other.

## Perspectives of those who are undecided/don't know

The perspectives of the undecided/don't know cohort were not very apparent at community consultations, but they are more readily accessible from the quantitative survey data. The following list of questions and statements from the survey drew a combined response of 'undecided/don't know' from more than 50% of respondents:

- likelihood of supporting the introduction of an onshore natural gas industry in Victoria
- the potential benefits of onshore natural gas outweigh the potential costs and risks
- an onshore natural gas industry in Victoria would ensure lower prices for natural gas for households
- tourism in parts of country Victoria would be negatively affected by onshore natural gas activities
- the impact on agriculture in Victoria would be negative
- farmers and other landowners could get better returns if there was an onshore natural gas industry in their area
- any risks involved in onshore natural gas operations are low
- the risks of contamination to surface water from onshore natural gas activities are unacceptably high
- the risks to underground water supplies from onshore natural gas are unacceptably high
- there are no public health issues likely to arise from being near onshore natural gas activities
- there would be no health issues for those living near onshore natural gas operations
- the technology involved in onshore natural gas is proven scientifically
- onshore natural gas activities would be divisive or disruptive in the local communities where they might be located
- the onshore natural gas industry would damage the views/visual amenity in the Victorian countryside
- farmers and other landowners would be adequately compensated for any onshore natural gas disruption to their farming and other operations
- companies that might be in the onshore natural gas business cannot be trusted.

This is a significant list of questions and statements relating to a possible onshore natural gas industry for which a majority of Victorians do not believe there is sufficient basis for them to make a decision or know the answer.

Consider further the question *“the risks to underground water supplies from onshore natural gas are unacceptably high”*. The risks from offshore gas extraction following 50 years of experience are well known, but for onshore natural gas the assessment of risks must rely on current knowledge and experience, and a well-informed judgement.

For onshore natural gas, the level of certainty possible in risk assessment is lower, well informed judgements can differ substantially, and a *‘don't know’* or *‘undecided’* response could be a reasonable and cautious response in this situation. The fact that about half of a well-structured sample of the Victorian population is providing don't know/undecided answers to searching questions about onshore natural gas industry development is an indication of where community opinion is at this time and it cannot be ignored or dismissed as unworthy of further attention.

## Key areas of disagreement within the community

The consultation process revealed some key areas of strong disagreement within the community at this point in time. An overview of these key areas is provided below.

### Benefits and costs

The potential of net gain from an onshore natural gas industry in Victoria is strongly disputed and includes considerations of benefits relative to costs, to whom they accrue and over what time period.

The stated benefits include: the revenue streams to the mining companies, the State and landholders; increased economic activity within the State generally; better regional services and employment opportunities; and benefits to agriculture, manufacturing and natural resources.

The stated costs include: damage to natural resources, especially water sources; collateral impacts on other industries (such as tourism and agriculture); negative biodiversity impacts; negative impacts on residential and recreational amenity, and changes to the regional economy and community character.

These benefits are seen as accruing over the medium term (10-15 years) and to companies and individuals remote from the regions affected, while the cost burden is seen to accrue over the longer term (perhaps generations) to be borne by the regional communities affected. This separation of benefits and costs in time and space can be seen as inequitable or not relevant depending on the viewpoint taken.

A striking feature of this situation is that, as yet, there is no comprehensive economic analysis of the benefits and costs to Victoria of an onshore natural gas development. There would be complex valuation challenges but a competent economic analysis would be a vast improvement on the current situation of claim and counter claim.

### Capacity of the legislative and regulatory system

Governments, acting for the community, use legislation and regulation to oversight and control the development and practices of industries such as onshore natural gas. The powers, resources and capacity of the regulator have been consistently drawn into question throughout the consultation, but the quantitative survey reveals high community expectations about regulatory control of the onshore natural gas industry.

While supporters of onshore natural gas development regard the current legislation and regulations as substantial and appropriate, and supported by industry codes of practice, many others see the current regulatory instruments in Victoria (e.g. Petroleum Act 1988 and the Mineral Resources Sustainable Development Act 1990) as inadequate, and suggest that better models exist in other Australian states and overseas. One academic's view on potential regulatory reform is offered later in this chapter.

### Access to land

The potential for imbalance of power in the negotiations between the mining companies and the landholders is a major source of community concern.

Negotiating processes for access to gas resources on private land are often characterised as being 'in favour' of the mining companies. This is because of the superior knowledge and experience of the companies, the commercial-in-confidence agreements with landholders, the legislated powers to access land and the capacity to refer compensation disputes to VCAT.

While exploration companies technically have the right to access to private land for exploration, they state they are reluctant to use it. Rather, they prefer to work cooperatively with landholders who are interested in development.

The number of agreements in-place in other states and the absence of cases referred to VCAT are offered as evidence that this is effective. The potential for an imbalance of power has been recognised in Queensland and New South Wales where codes of practice have been established to help ensure effective negotiation occurs between companies and landholders.

### Energy market arrangements and their consequences

National energy policy makes no provision for the reservation of gas for domestic users at prices below those obtainable in export markets (noting that Western Australia does reserve gas but not at a lower price). It has been stated that, in an era of rising export prices in the longer term the gas industry will be firmly focussed on the more lucrative export market.

With the commencement of export from the eastern seaboard it is anticipated that when gas supply contracts are renewed the price of gas will reflect the higher export pricing available in Asian markets. The availability of gas to domestic consumers could be an issue at times.

The effect of these changes on domestic commercial gas users and on household users will be significant, especially for industry users without energy alternatives. It can be anticipated that a return to coal derived energy is likely for users without alternatives.

The changes will cause significant distress in the household sector, and especially in lower income households. Some will argue that this is a natural market adjustment; others will argue that there is little competition or transparency in the gas market and a marked imbalance of power in favour of suppliers, and others will point to the gas industry and its participants as the principal beneficiaries of the changes, to the detriment of the general community.

A decision about onshore natural gas development in Victoria is likely to take place in the context of this highly charged atmosphere.

### Risk management

The extent to which potential risks associated with onshore natural gas development are understood and able to be mitigated has been prominent in the community engagement.

Attitudes to the adequacy of scientific understanding of the risks of onshore natural gas are sharply divided. Risk appetites also vary considerably, with proponents of the industry being less risk averse and much more confident that risks can be mitigated than the opponents.

Proponents of onshore natural gas point to decades of offshore – and onshore – industry experience, and to high levels of reliability. They highlight continually improving technology as further mitigating these risks.

However, opponents highlight prominent cases of ‘industry failure’ attributed to the science, the regulation, or both being found wanting and failing to protect individuals and the community from significant impacts. Proponents and opponents both point to scientific evidence and ‘credible and independent scientific authorities’ in support of their positions. It seems that scientific evidence is necessary but not sufficient in itself to resolve these complex administrative decisions.

The appeal to scientific authorities is also complicated by disputes as what constitutes a ‘credible and independent scientific authority’. Organisations such as CSIRO have relevant expertise and arguably have a very good reputation and public standing for science quality and independence. However, some participants felt that there was a conflict of interest wherever any scientific organisation accepted funding from relevant industries and, as a consequence, their advice should be discounted.

Substantial difficulties arise for decision-makers in policy issues when the advice of scientific authorities can be disqualified on this basis.

## Attitudes of key stakeholders

### Victorian Farmers Federation

The Victorian Farmers Federation (VFF) policy position<sup>1</sup> on the development of onshore natural gas is one of ‘free choice’ for landholders. The VFF emphasises managing risks to natural resources, good regulation of industry development and its ongoing operations, and the fair treatment of landholders involved.

It does not feel current arrangements deliver the above and seek the following changes:

- a power of veto for landholders not wanting exploration or development on their land
- more transparency in negotiations and more equality in negotiating power for landholders relative to the companies
- adequate compensation for landholders and local communities
- minimal external impacts for neighbours and communities adjacent to onshore natural gas exploration or development
- assurances risks will be managed and monitored
- regulation that will be effective in controlling industry development.

### Dairy industry leadership group (manufacturers, ADIC, ADPF, UDV)

Dairy manufacturers are very large energy users and increasingly large natural gas users. Given the scale of their energy requirements they have analysed energy the markets thoroughly.

Dairy manufacturers all see the possibility of onshore natural gas in Victoria as a peripheral issue in terms of reducing the gas price, which they view as primarily determined by the export price. However, they are greatly concerned about the associated risks to markets and milk production.

There is a great deal of sensitivity to market perceptions of Victoria as a natural production zone changing for the worse with the development of an onshore natural gas industry, leading to damage to the reputation of Victorian/Australian product in valuable and sensitive markets. Fears were expressed that “the loss of markets will swamp and any gains from natural gas.”

Dairy industry organisations were focussed on the risks to key resources and in particular, contamination of water and its repercussions. The implications for other farmers and the wider industry when individual farmers become involved with onshore natural gas was also a major concern.

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<sup>1</sup> Source: The VFF’s Mining and Petroleum Policy Principles, VFF, April 2015.



There was concern about the extent to which the 'science' was sufficiently understood to manage the risks of onshore natural gas, but support for credible scientific organisations such as CSIRO as advisors in these matters.

The capacity for the regulators to manage the 'worst performers' and thereby protect industries and the community was seriously questioned, referring to a number of failures as evidence and the risks to an industry of even one isolated event.

### **Dairy farmer discussion groups (Gippsland)**

Dairy farmer participants declared a limited knowledge of onshore natural gas and a desire to learn more, as well as articulating suspicion about the 'anti or activist' information they had received.

They recognised a number of concerns but were generally more open minded to the possibility that onshore natural gas in Victoria could have benefits to the wider community and to them as landholders.

The concerns raised include possible impacts on the quality of milk, and on the availability and price of key natural resource inputs, especially water. Other concerns were the impacts of onshore natural gas activities on other farmers' lands and how this could affect their activities through changes in water, subsidence, and amenity.

Another concern raised was whether dairy farming and onshore natural gas development could coexist effectively on their own land.

The potential capacity of companies to gain access to properties against the wishes of the landholders was a concern, as was the ability to drill from a neighbour's farm under their own property.

There was limited faith in the capacity of regulators to effectively manage the development of the industry (coming off the back of the recent open cut mine fire near Morwell in late 2014), and perhaps more faith in the ability of individual farmers to satisfactorily negotiate with companies.

Parallels were drawn with wind farms, and the potential to receive additional revenue while continuing to farm were seen as attractive, but assurances that 'it was safe' and that other impacts could be managed were sought.

Independent scientific authorities were seen as important in providing these assurances and organisations such as CSIRO were considered reliable. The wider economic benefit to the community of the development of onshore natural gas was generally seen as good, particularly the extra jobs that could be available.

### **Grain growers (Western and North Western Victoria)**

The attitude of grain growers was generally determined by the perception of the potential for the onshore natural gas industry to affect the supply or quality of ground water.

In situations where the local ground water was not going to be affected by onshore natural gas operations due to the nature of local aquifers, grain growers were supportive of development due to the possibility of an alternative income stream that was independent of the fluctuations of farm incomes, as well as the broader possibility of increased economic activity, employment and industry diversification for the region.

This view was influenced by the fact that many growers had seen these benefits from wind farming and rare earth mining in their area. This was generally seen to be well managed, even though the employment opportunities were greater during the industry establishment phase.

A good example of this situation is the region around Cullulleraine where the water supply is piped overland from the Murray River. The consultation revealed that the general view of farmers was that onshore natural gas development would be considered positively if there was no impact on the water source, which was seen to be unlikely.

However, where the quantity or quality of ground water is seen to be at risk in any way because of potential onshore gas operations, the attitude to the development was entirely different and adversarial. The critical dependency of these farmers and the community on ground water supply and quality was seen as not worth risking, and absolutely solid assurances regarding the protection of the water source would be needed before any serious consideration of onshore natural gas development would be supported.

An example of this situation is Murrayville which draws town and farming water from a saucer shaped 'reservoir' of good quality water underground. The community has stated that this water is surrounded by very saline 'black' water which is prevented from contaminating it by naturally occurring hydraulic pressure.

This water source is expected to last 300 years and the town and surrounding farms are entirely dependent on it. Consequently, there is an attitude of zero risk to any activity that might threaten this vital fresh water source, and deep concerns that the drilling associated with onshore natural gas exploration would threaten the town's existence.

In other respects these communities are very similar. Both communities raised concerns about the biosecurity risks associated with vehicle traffic from region to region and the complexity of managing this risk with mining and other companies.

Amenity was less of an issue in this region as it was less closely settled and farmers felt that infrastructure associated with onshore natural gas could probably be accommodated to allow normal farming operations.

### Extensive grazing (South Western Victoria)

The attitudes of communities in South Western Victoria to onshore natural gas development were significantly influenced by many farmers' experiences with the now failed blue gum industry expansion in the region.

The negative impacts from blue gum development were seen to have affected agriculture, tourism, and local infrastructure (especially roads), and to have significantly changed the character of the community locally. The impact of blue gum development on neighbouring farming properties was not managed nor compensated well, and divisions developed between those involved in blue gums and the general farming community.

With the collapse of the blue gum companies a major restoration is underway. Many people expressed fears that a potential onshore gas development may create similar issues.

Responses were not entirely uniform but the predominant position was one of reticence. The concerns raised included potential impacts on water courses, impacts on land prices, negative impacts on food and agriculture and its 'clean/green' image, regulators failing to control industry development, scepticism that the benefits would flow to the community, external impacts on neighbours and the wider community, and a general concern the risks were too high relative to the benefits.

There was also a recognition by some farmers that the industry could provide a valuable additional cash flow and regional employment if it could be well managed and well controlled.

## Commercial gas users

The situation facing commercial gas users in Victoria is that demand in the eastern states integrated pipeline has grown dramatically in recent years from 700 PJ (petajoules) to 2100 PJ due to the securing of large LNG export contracts by Queensland based companies, which will have to be partly met from the wider pipeline system at least in the shorter term.

Australia generally does not reserve any of its gas for domestic users, except for Western Australia which does reserve gas but at export-based prices.

Commercial gas users have already experienced a more than doubling of the previous long-term price to \$9/PJ, and they expect to go higher towards Asian prices (e.g. \$16/PJ currently in Japan). At this price domestic industries highly dependent on gas will struggle to be competitive, the effects of which could play out in terms of closures, job losses and less investment quite quickly.

Commercial gas users are finding that renewal of gas supply contracts has become problematic as suppliers have in sight lucrative alternative export markets and concerns about supply. Competition in the domestic market is also reduced and some suppliers are now reluctant to arrange longer-term contracts given the prospects of increasing prices in future.

Gas suppliers now have strong incentives to 'reserve' gas for the export market at the expense of the domestic users. The conditions of new contracts are also becoming onerous in terms of 'take or pay' requirements and the practice of 'joint marketing' by major suppliers is seen as unfair. This range of new behaviours is seen as an inappropriate level of supplier power which is not being effectively managed by the relevant authorities.

A policy change is urgently sought to allow the orderly and managed marketing of gas to the export and domestic markets, to increase competition and transparency in the gas supply market and/or reduce excessive supplier market power.

Some seek interventions that achieve domestic gas prices closer to the traditional long-term trend level. Others seek a managed, effective and more transparent gas market similar to that for electricity.

Commercial gas users are concerned that the impacts of higher gas prices on industry competitiveness and domestic users will be felt far more rapidly than any impact of the development of an onshore natural gas industry in Victoria. Some companies are foreshadowing a return to coal as a cheaper and more predictable energy source.

Victoria's largest single user of gas is Australian Paper, which employs some 1300 people directly. The company has stated categorically that an increase of the gas price of the scale anticipated will render the business uncompetitive as it has no viable alternative sources of energy.

## Household gas users

Organisations representing household users of gas see current energy prices (electricity and gas) as a major community concern, and they are predicting further substantial increases in gas prices possibly in the order of two to three times current levels. This level of price increase will have significant social consequences, especially for those at the lower income levels.

The influence of the development of an onshore natural gas industry in Victoria is regarded a 'nearly irrelevant' in terms of its influence on future gas prices, in view of the export orientation of the gas market.

These organisations saw the structure of gas market as not providing the same level of transparency as the electricity market, with the potential for greater capacity to manipulate the market. The structure of the European gas market was seen as superior and providing a model Australia could follow.

There was also seen to be conflict between the government policies for resources, agriculture and energy for industry and for households which is creating tensions between competing objectives. In particular, Victoria was seen to have greater potential for conflict between competing uses of land, such as agriculture and onshore natural gas, since agriculture is more intensive and closely settled in Victoria compared to the areas of Queensland and New South Wales where onshore natural gas development has occurred.

Some measures to smooth or cushion the transition to higher gas prices were suggested, including reservation of gas for domestic use at a price lower than the export price, using resource rents to offset the market price, storing gas (e.g. underground) to manage seasonal price peaks, and regulating the rate at which gas prices can increase for the domestic market.

Regardless of what, if any, amelioration measures are taken there is little doubt that household use of natural gas will undergo a major change as the price rises.

### Related government agencies

Most local government agencies representing areas prospective for onshore natural gas have taken a cautious or negative stance with respect to the possibility of the development of an onshore natural gas industry. Their concerns centre around any potential for contamination of the natural resource base, as well as impacts on the amenity of the landscape, community character and collateral impacts on other industries or community activity.

Those agencies in the higher rainfall zones made particular reference to concerns about the potential for negative impacts on agricultural productivity.

Councils in areas where mining or offshore gas development has significant presence were more open to the prospect of development of onshore natural gas, highlighting the possibility that both the local economy and local employment opportunities might be enhanced.

A number of councils expressed concerns that their level of influence in this matter appears to be small, yet their accountability to their communities is high. Most concede limited detailed knowledge about onshore natural gas.

They were quite anxious about the extent of their role, or otherwise, in any process of decision making about onshore natural gas development in the face of significant constituent activism. A number commented that this community consultation was a very positive process overall.

The water authorities interviewed highlighted that, as government agencies, their role was to implement government policy and programs. However, they did emphasise that the water industry is a major energy user, water quality is crucial and that water supply is paramount for the community.

They acknowledged that any water authority would have concerns about the potential for 'depressurisation' of vital aquifers and the above ground integrity of waste water storages. There was concern about there being no requirement for onshore natural gas development applications to be referred to water authorities given their expertise in water and accountabilities. The need for adequate regulatory processes to ensure water system integrity was emphasised.

Landcare Council of Victoria emphasised the importance of credible, scientific information to inform both the decisions of government in respect to onshore natural gas and its own subsequent decision-making.

## The effective regulation of onshore natural gas development

Many people participating in the community consultations and the quantitative surveys raised concerns about the effectiveness of regulation of onshore natural gas development.

Professor Samantha Hepburn, Deakin University<sup>2</sup>, has provided advice to the effect that Victoria is in the enviable position of being able to draw from national and international best practice in designing a regulatory model for an onshore natural gas industry. The current regulatory instruments (e.g. Petroleum Act 1998 and the Mineral Resources Sustainable Development Act 1990) are seen as not well tailored for the task of regulating a potential onshore natural gas industry; nor do they meet community expectations.

Professor Hepburn suggested an example of what might be undertaken in Queensland, where a mandatory code of conduct and compensation has been introduced which ensures onshore natural gas exploration or development proceeds only with landholder agreement, so diffusing much of the angst associated with the process of gaining access to landholders properties.

Suggestions were offered for a range of features that Victoria should consider in a regulatory framework, including:

- a mandatory code of conduct and compensation, including provision for legal costs for landholders;
- public disclosure of revenue (or revenue range) offered to landholders to help balance negotiating powers;
- an holistic impact analysis by independent scientific authorities;
- protective frameworks for potential environmental, health and community impacts;
- codes of practice and standards for critical processes (e.g. drilling and fracking);
- bans on toxic chemicals and disclosure of those chemicals currently used in fracking;
- proportionate bonds and sanctions to support adequate remediation;
- redistribution of part of the royalties earned to the regions and communities providing onshore natural gas;
- removal of executive powers to waive regulatory requirements;
- simplification and clarification of the current regulatory system;
- integration of national and state regulatory processes for onshore natural gas to improve efficiency.

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<sup>2</sup> Professor Hepburn is Professor of Law at Deakin University. She has a strong research interest and expertise in unconventional gas regulation in Australia, and was a presenter at the International Natural Gas and Fracking Conference: Sydney 2014.

# Community views on the development of onshore natural gas

## Part B – Overview of quantitative study of community attitudes

A survey of the attitudes of 960 Victorians was conducted in September 2014. The core objective of the research was to quantify the current opinions of the Victorian public about onshore natural gas and the potential introduction of an onshore natural gas industry. The sample consisted of 400 from metropolitan Melbourne and the rest from the rest of Victoria. The main sample involved an online survey with additional interviewing conducted by telephone to provide a boost sample of 250 in the areas defined by the current geological survey maps as areas that might be most likely to be directly affected by any future onshore natural gas industry (known as the Western Victorian area and the Eastern Victorian area). The full quantitative report can be seen in Appendix 3.

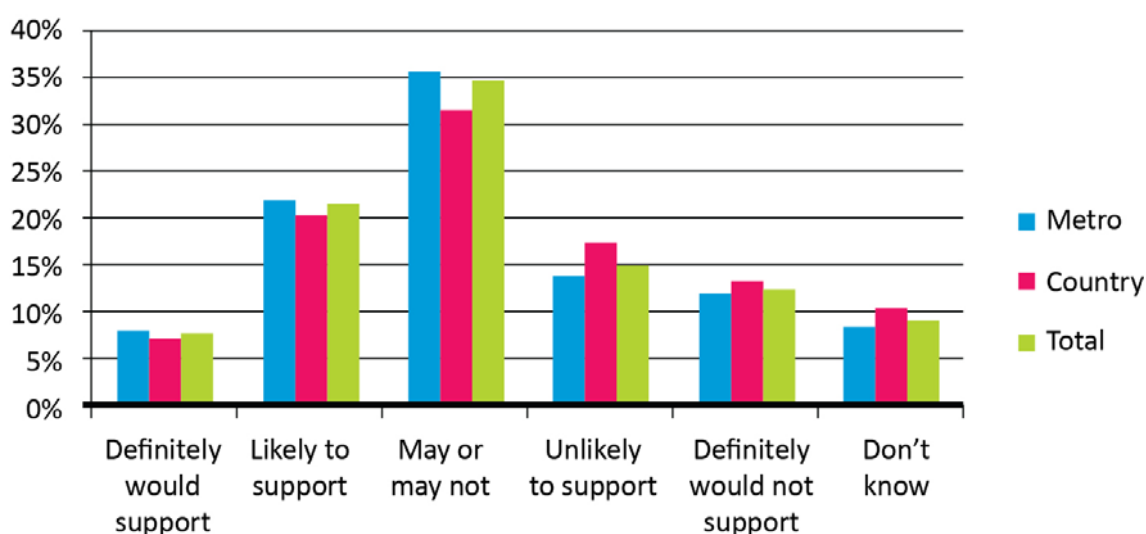
The main objectives of surveying the Victorian community were to identify:

- the overall level of support for a potential onshore natural gas industry;
- community views on the net benefits of a potential industry, on the impacts and opportunities of a potential industry, on industry consultation, and on regulation and control of the industry;
- any differences in attitudes between metropolitan and rural communities;
- the community perspectives in potentially directly impacted areas.

### 1. Current attitudes to a potential onshore gas industry

Interviewees were asked the key question: “Considering what you currently know about the onshore natural gas Industry how likely would you be to support the introduction of the industry in Victoria if it turned out to be feasible in the future.” The results are shown in the chart below.

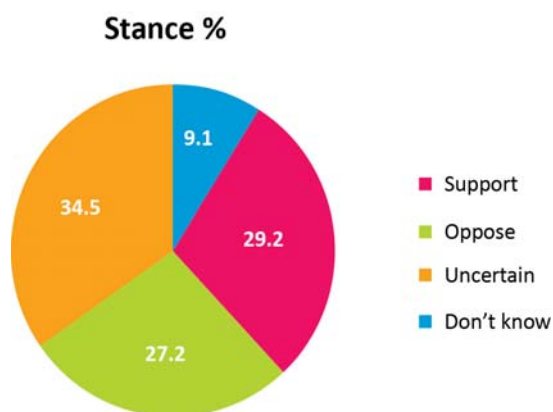
### Likelihood of supporting the introduction of an onshore natural gas industry in Victoria



Firstly, it is immediately apparent from the chart that the difference between the attitudes of metropolitan and country people in general are quite small and not a significant consideration.

Secondly, the community can be considered as having a ‘stance’ which is polarised into three sizable groups that support, or do not support, or are undecided/don’t know at this point. In numerical terms the overall support level (definitely/likely) for an onshore natural gas industry in Victoria was 29%, the overall opposition level (definitely/likely) was 27%, while the overall undecided/don’t know component was 44%<sup>3</sup>.

This overall stance is significant because it is reflected to a greater or lesser degree in the response patterns to most questions.



Some insight into why this situation prevails can be gained from the reasons given by interviewees for their attitudes above. Respondents were asked about the reasons for their stance on the onshore natural gas industry “What are your main reasons for that attitude towards the onshore natural gas industry?”, and the detailed reasons – or lack of reasons for the ‘uncertain’ and ‘don’t knows’ – are summarised below.

Main reasons for support/not support onshore natural gas	
Unsure of environmental impacts	29.4%
Need more information	28.0%
Good for our future/economy	14.9%
Cheaper energy	8.3%
Fracking process is detrimental	7.3%
Possible side effects on groundwater	7.0%
Effects people’s lives adversely (e.g. health/property)	5.7%
Cleaner energy	5.5%
Support it/general positive feelings	5.1%
General negative feelings	4.7%
Creates employment	4.1%
None/nothing/no comment	3.8%
Don’t know	3.7%
Renewable energy sources are better	3.2%
All about money/profit	3.1%
Not sustainable	1.9%
Other	1.5%
No cheap exporting	1.4%
Don’t trust governments honesty	1.1%

<sup>3</sup> The quantitative report sets out its approach to ensuring unbiased and robust findings. Figures are rounded.

## 2. Community views on the net benefits of a potential industry

Interviewees were questioned in a variety of ways about their perception of the net benefits of an onshore natural gas industry, and the results are given below.

Net benefits	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Total
On balance, the benefits far outweigh the costs	2%	16%	23%	13%	12%	34%	100%
The potential benefits of onshore natural gas outweigh the potential costs and risks.	2%	15%	23%	13%	13%	34%	100%
The potential benefits of onshore natural gas far outweigh the potential costs and risks.	2%	12%	25%	13%	13%	35%	100%
I believe that the benefits of an onshore natural gas industry clearly outweighs its risks	3%	14%	27%	15%	12%	29%	100%
The fact that the onshore natural gas industry is well established in other places makes me confident about its overall value to the community	2%	20%	26%	17%	13%	22%	100%
Onshore natural gas would only provide short term benefits but disadvantages could be long term	14%	19%	21%	10%	2%	35%	100%

Respondents were consistent across this issue with around one third (33%) stating they 'did not know' whether the benefits of an onshore natural gas industry outweighed the costs, with around 17% saying it does and around 25% disagreeing this is the case. The remaining 25% of the population took the middle position. When the issue was framed in terms of short term benefits versus long term disadvantages the attitudes were slightly more negative with a total of 33% agreeing that this was the case.



Respondents were also asked their perceptions about jobs and export opportunities for Victoria arising from a potential onshore natural gas industry, and the results are given below.

The Victoria wide opportunity	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Total
The onshore natural gas industry could represent a large opportunity for the Victorian economy in terms of investment and jobs.	6%	38%	25%	6%	4%	21%	100%
Export opportunities for Victorian natural gas would generate investment and jobs for the State.	7%	38%	20%	7%	5%	24%	100%

There was a very positive assessment about the potential for jobs growth, with the alternative views largely in the undecided/don't know category.

### 3. Community views on the impacts of a potential onshore natural gas industry

Respondents were asked about the impact of an onshore natural gas industry on local industries and the results are given below.

Industry impacts	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Total
Tourism in parts of country Victoria would be negatively affected by onshore natural gas activities.	11%	25%	23%	9%	1%	32%	100%
The impact on agriculture in Victoria would be negative.	12%	18%	24%	9%	3%	35%	100%
Farmers and other landowners could get better returns if there was an onshore natural gas industry in their area.	2%	16%	23%	11%	8%	40%	100%

The undecided/don't know responses were dominant in this area, but a negative perception was indicated for tourism and agriculture.

The local community impacts were looked at separately and the responses are given below.

Local community impacts including visual amenity	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Total
An onshore natural gas industry would not lower land values in the local area it operated in.	2%	10%	23%	22%	13%	30%	100%
An onshore natural gas industry would have a positive impact for people living in the area where operations were.	3%	17%	29%	11%	10%	30%	100%
Onshore natural gas activities would be divisive or disruptive in the local communities where they might be located.	12%	25%	23%	7%	1%	32%	100%
The onshore natural gas industry would damage the views/visual amenity in the Victorian countryside.	14%	24%	24%	8%	1%	29%	100%
Local employment in areas of onshore natural gas operation would increase.	5%	41%	24%	5%	3%	22%	100%
An onshore natural gas industry would not be visually ugly in the country landscape.	3%	12%	24%	19%	11%	32%	100%

Overall the undecided/don't know category was the dominant response but strong concerns were indicated in relation to industry disruption and visual amenity.

#### 4. Community views on the need for consultation

Respondents were asked about the need for consultation in the future and the results are given below.

Need for community consultation in future	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Total
The local community would need to be extensively consulted before any onshore natural gas activity occurred in an area.	42%	28%	13%	2%	1%	14%	100%
Farmers and other landowners should be able to refuse access to onshore natural gas activity on their land.	29%	27%	17%	6%	2%	19%	100%
I do not believe that most of the Victorian community is well enough informed about the onshore natural gas industry.	27%	34%	18%	5%	1%	14%	100%

There was a strong indication given that there is a need for local community consultation in the future and the need for further information to be provided. The majority of respondents felt this way. There was also definite support by the majority for farmers to have the right to refuse access to onshore natural gas activity on their land<sup>4</sup>.

<sup>4</sup> The survey did not identify that minerals are owned by the State on behalf of the community and that compensation is payable to landowners for access. It is unknown how respondents might have answered if they knew there was a cost to the wider community. This aspect would need to be tested through further survey, subsequent to this project.

## 5. Community views on regulation and control

Respondents were asked about regulation and control and the results are set out below.

Regulation and control	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Total
No amount of government rules and regulation can make an onshore natural gas industry satisfactory.	13%	16%	25%	15%	3%	28%	100%
The government would need to control companies involved in onshore natural gas activity strictly.	34%	36%	13%	2%	0%	15%	100%
Effective government regulation of an onshore natural gas industry should be straightforward.	14%	34%	20%	8%	5%	20%	100%
Government can make sure there are sufficient regulations to create a sound onshore natural gas industry in Victoria.	10%	34%	20%	11%	7%	19%	100%

There is strong support for government control of onshore natural gas activity (70% agree) and a reasonable level of confidence that they (government) can make sure there are sufficient regulations (44% agree) to achieve this. However, there was also significant support for the view that no amount of government regulation can make the industry satisfactory (29%).

## 6. Community views on the environment and related issues

Respondents were asked their views about the environment and related issues and the results are set out below.

Personal attitudes to the environment and related aspects	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Total
I am totally opposed to any onshore natural gas activity in Victoria.	11%	13%	32%	21%	7%	17%	100%
I would support the development of an onshore natural gas industry in Victoria.	3%	21%	29%	10%	13%	24%	100%
I would actively oppose an onshore natural gas industry in Victoria.	9%	12%	31%	22%	7%	19%	100%
I am uncertain about whether we should have an onshore natural gas industry in Victoria.	10%	30%	24%	16%	7%	13%	100%
I am committed to environmental causes.	17%	32%	36%	7%	2%	5%	100%
I believe that urgent action is needed on climate change in Australia.	28%	30%	24%	8%	4%	6%	100%
Global warming is a major and urgent problem for the world.	31%	30%	22%	7%	5%	6%	100%
I believe having renewable sources of energy is of vital importance.	38%	40%	14%	2%	1%	6%	100%

The general community viewpoint is split on the industry itself and, as previously, we have a quarter supportive, a quarter unsupportive and the remainder uncertain or not knowing. The strength of feeling by some opponents is indicated by some 21% agreeing that they would actively oppose the industry in Victoria. The level of support in the areas of environmental causes, climate change, global warming and renewable energy was strong. These views underline the extent to which the Victorian community feel strongly about energy and environment issues, which is a factor in the large proportion uncertain about having an onshore natural gas industry.

## 7. The differences between metropolitan Melbourne and rural Victorian views

There were slight differences between the responses to most issues in rural areas compared to those from metropolitan Melbourne. The main differences of note one in rural areas are the lower levels of trust in science and scientists to manage risks, and in government to ensure adequate compensation to farmers for disruption to farming operations. There was also little difference between the undecided (neither agree nor disagree) and the proportion of 'don't knows' between Melbourne and the rest of the state. On most issues typically around one quarter are 'uncertain' and another quarter 'don't know'. In view of this situation, and the extensive presentation of the results in the quantitative report, a descriptive summary only of the results is presented here.

Melbourne respondents are somewhat more positive about the potential of an onshore gas industry, its possible benefits in terms of 'keeping natural gas prices down', and in seeing natural gas as 'being better for the environment'. They are also slightly more likely to see a need to act quickly to take advantage of any potential opportunity, and they have a more positive assessment of the benefits in jobs and export opportunities from the Victoria-wide perspective. Despite these views, capital city respondents do not see the net benefit picture that differently. Both capital city and rural respondents have very similar views on the benefits versus costs equation.

The rural community sample was more sceptical about the value of scientists in monitoring risks and the extent to which scientists can be trusted (14% and 10% differences respectively). These were marked differences in view compared to the metropolitan sample. In a similar vein, Melbourne respondents are both more definite that government has to strictly control the industry, and have a stronger belief that it can. For example 45% agree that government can make sure there are sufficient regulations to make the industry sound compared to 39% of rural respondents.

## 8. Community attitudes in the potentially affected west and east geographic areas

Community attitudes in the areas more prospective for gas were examined more specifically and compared to the responses from metropolitan Melbourne. The results are shown below.

	MAIN SAMPLE		Total main sample	AREA SAMPLE		Total potential gas area sample
	Metro	Non metro/rural		Western Victorian gas area	Eastern Victorian gas area	
Definitely would support	8%	7%	8%	4%	6%	5%
Likely to support	22%	20%	22%	15%	6%	9%
May or may not	35%	32%	35%	34%	29%	31%
Unlikely to support	15%	17%	15%	16%	27%	23%
Definitely would not support	12%	13%	12%	25%	22%	23%
Don't know	9%	10%	9%	6%	11%	9%
Total	100%	100%	100%	100%	100%	100%

In the potentially affected gas areas opposition to an onshore gas industry is much stronger. If opposition is measured as the 'unlikely to support/definitely would not support' categories then 46% of the gas areas' sample are opposed to the industry as against 27% of the metropolitan sample. Similarly, support for the industry (definitely would support/likely to support) in the affected areas is low at 14% as against the metropolitan figure of 30%.

The detailed survey results from the quantitative report reveal some of the underlying reasons for these attitudinal differences:

- 37% of the potentially affected areas' sample as against 25% of the metropolitan sample disagreed that the potential benefits far outweigh the costs
- 47% agree that benefits would be short-term and disadvantages long-term compared to 32% agreeing in the metro area
- 18% agree that an onshore natural gas industry would help keep prices down in Victoria compared to 28% in the metro area
- the perceived risk to water supplies is a particular concern for Eastern and Western area people with 50% agreeing the risks to underground water supplies from onshore natural gas are unacceptably high compared to 34% in the metro area
- people in Eastern and Western Victoria are more sceptical of the likelihood of a science program to understand and monitor the possible impacts of a potential onshore natural gas industry on water supplies to ensure that there was no damage, with only 22% agreeing with this compared to 37% of metro respondents
- at the local level they believe they are less likely to see increased employment benefits (37% agree compared to 48% in the metro area)
- in the area of personal attitudes, those living in the Eastern and Western areas have almost identical attitudes to climate change and the environment in general to those in Melbourne.

These results provide insights into the reasons why regional people in the potentially affected areas are more opposed to an onshore natural gas industry than their metropolitan counterparts.

There was a noticeable difference between the Western Victorian gas area and the Eastern Victoria gas area in support for the industry. For almost all of the attitudinal criteria examined the responses from the western gas area were more positive towards industry development than those from the eastern gas area, and the undecided proportion of the population was lower. Overall, the west is more positive about the industry and its potential benefits, but they are more concerned about water contamination issues, possibly because of the greater concern about water supply generally in the west of the State.

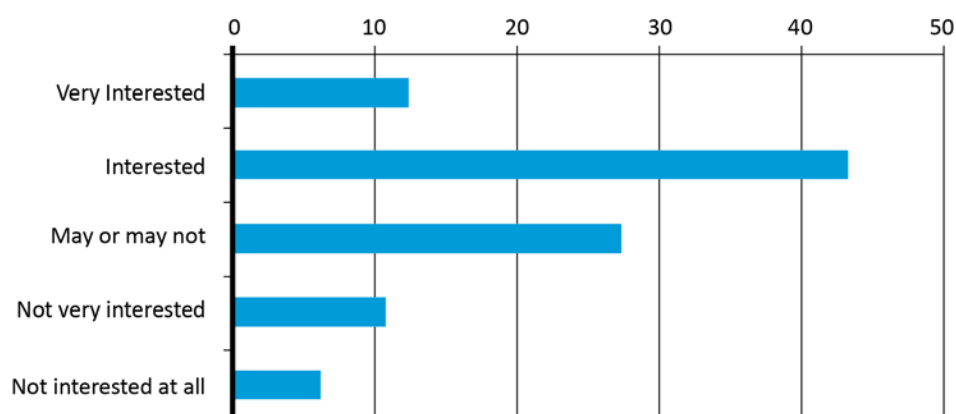
## 9. The level of awareness about onshore natural gas

In terms of their knowledge of onshore natural gas, including coal seam gas, the level of knowledge indicated was limited. Some 43% indicated they knew not much at all, including nothing at all, with 41% saying they knew a little and 17% considered they knew a lot or a fair bit.

	Region		Total
Knowledge level – onshore natural gas	Metro	Non metro/rural	
A lot	3%	2%	3%
A fair bit	14%	15%	14%
A little	41%	39%	41%
Not much at all	42%	45%	43%
Total	100%	100%	100%

The current sources of information on onshore natural gas are usually television, newspapers, internet, radio and friends. It was significant that a large proportion (55%) of those surveyed expressed interest in learning more about onshore natural gas as shown in the chart below.

### Interested in onshore natural gas information (%)



The strong desire for more information revealed here appears to present one way forward in resolving some of the policy issues about onshore natural gas in Victoria.