



**ACOLA ARC LASP Program Securing Australia's Future Project # 6
Engineering Energy: Unconventional Gas Production**

Social License and Communications Report

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Executive Summary

This report outlines the concept of social license as it applies to the further expansion of unconventional gas activities in Australia. The report acknowledges the remote nature of much potential development and discovery. However, our report suggests that social license goes beyond mere regulatory approval and consent conditions and incorporates a dynamic form of consent from wider publics who may affect a project's viability, profitability or operations. Social license is an effective way to understand the complex interactions between those immediately impacted by new developments and these wider publics who may or may not have close physical proximity to any unconventional gas activities.

The report identifies a number of issues with the gas industry and suggests how the withdrawal of social license may affect financial, technical and regulatory elements of projects. The report outlines five lessons that are instructive from current research in public perceptions of energy and climate issues:

1. *No issue, no public*: Dissenting publics are not the issue, but are mobilised in response to an issue. For instance, remote and urban communities may unite around common concerns about water and other environmental impacts. Managing issues means having real dialogue, a commonly agreed strategic narrative and respectful industry practices down to operators.
2. *Unconventional Gas lacks 'strategic narratives'* – there is no convincing storyline that positions unconventional gas as a viable or necessary part of the energy future for Australia or valued overseas counterparts, e.g., China or Japan. This has harmed companies' social license to operate and runs the risk of undermining it.
3. *Expressing risk* - The Oil and Gas Industry (both offshore and onshore) has its own conceptions and culture of acceptable social and environmental risks; its own 'risk rationality'. Lack of fit between this rationality and community expectations have added to the contestation of social license and surrounding conflict.
4. *Social License is dynamic* and changes over the course of a project – however, many communication plans are static and do not accommodate this dynamism.
5. *Trust must be developed early*. Establishing and maintaining "active trust" is critical if community engagement is to evolve into social license.

The report outlines a roadmap for building social license based on addressing issues and building opportunities for collaborative value creation. We note the familiarity and favourability of 'renewable energy', defined as energy which can be obtained from natural resources that can be constantly replenished. Importantly, we lay a pathway for the collaborative development of a strategic narrative for the industry that supports social license and highlights the role of governments in enabling and developing confidence. The report shows how social license should not just be about minimising harm, but equally about understanding and enhancing how value is

perceived through different cultural lenses. We use the term 'strategic narrative' to encourage multiple justifications for the industry to be marshalled above and beyond its economic contribution. This includes justifications of social cohesion, its potential to provide clean energy and enhance industrial development. This leads to new strategic insights about how value can be created collaboratively to justify social, environmental, economic and technological risk. We also identify some tools for reducing social impacts and supporting social cohesion.

The report also cautions against a reliance on the assumption that industry or government already has 'the facts' about the safety, reliability and benefits of the industry. No steady-state of facts has been or is likely to be achieved. The dynamics of gas capital investment means that management has been adaptive, and 'science' emerged from real-world experimentation. This has been and will continue to be the case with unconventional gas. The extent of fugitive emissions, the composition and impacts of fracking fluids are under active experimentation, discussion and debate. The management of risk and uncertainty is a permanent feature of unconventional gas activity. In this context developing witnesses through citizen science is an important way of preventing the fracture between experts and the public as to what constitutes the 'science' of unconventional gas.

Local knowledge (both indigenous and non-indigenous) of country and waterways may be highly consequential and should be ignored at operators' peril. The report therefore outlines devices such as deliberative forums, citizen science panels and a strategic narrative that incorporates lessons from industry experience in Queensland and New South Wales, Australia.

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1. Introduction: Risks to social license

1.1 What is social license?

In the context of expanded unconventional gas activities, social license (or the social license to operate – SLO) is recognition that resource industry projects are collective efforts that sit within and shape societies. A ‘Social License to Operate’ is held when a project is legitimated by state regulatory agencies and all other social actors who could affect its development and profitability; and when the

expectations of proponents with regard to risks and benefits are successfully managed. It is only then that proponents are trusted and seen as legitimate and credible.

The concept of 'social license' first emerged at World Bank convened meetings about mineral projects in developing countries in the late 1990s in response to campaigns from newly mobile, networked and professional environmental organizations that publicized chemical spills, dam failures and conflicts². Since the early 2000s, prominent proponents of the SLO concepts, such as Robert Boutelier and his colleagues, have developed simple management devices for understanding how social reactions to and acceptance of projects has changed over time. The term is now firmly embedded in the fabric of mineral industry management and social movement campaigning as rhetoric or euphemism. It is employed in talking about a right to proceed but also about the potential impacts of negative responses from the community. It can be employed in the public sphere in debates between stakeholders or behind the walls of a single organisation in debates about the budget for community relations, public relations, media relations, or government relations.

Recent research has shown that SLO is increasingly becoming a core component of business activity for resource companies in Australia. Several common elements have been identified as the concept is used by industry engagement and 'Corporate Social Responsibility' officials and peak body representatives.³ These elements include:

- (1) that SLO goes beyond regulatory approval and consent conditions to incorporate wider publics who can affect the profitability of a project;
- (2) that SLO does not indicate universal agreement, but could exist along a continuum of approval, acceptance and support from various publics;
- (3) that any separation between the immediate community surrounding a project and a wider set of stakeholders and publics is fragile

1.2 Our treatment of Risk and Social License

Taken together, these elements suggest that social license is required for Projects to successfully obtain access to contested resources, as well as the capital, technology and labour to deliver a product to market at a competitive price. It is the entanglement of local and wider publics that grant, and can potentially withhold access to the resource, capital, technology and labour. Social license can thus impact project risk in a number of ways (Figure 1).

² As Thomson and Boutelier (2008) recount it, corporate public affairs director Jim Cooney argued that minerals industries needed a "social license to operate". For an overview see Thomson, I., & Joyce, S. (2006). Changing Mineral Exploration Industry Approaches to Sustainability. *SPECIAL PUBLICATION-SOCIETY OF ECONOMIC GEOLOGISTS*, 12, 149. There is an important sense that this new environmental sensibility was not only 'social' but an outcome of diverse new technologies like satellites to both make problems visible and new forms environmentally responsibility subjects. See for example Oels, A. (2011). Rendering climate change governable by risk: From probability to contingency. *Geoforum*.

³ Lacey, J., Parsons, R. and Moffat, K. (2012). Exploring the concept of a Social License to Operate in the Australian minerals industry: Results from interviews with industry representatives. EP125553. CSIRO, Brisbane

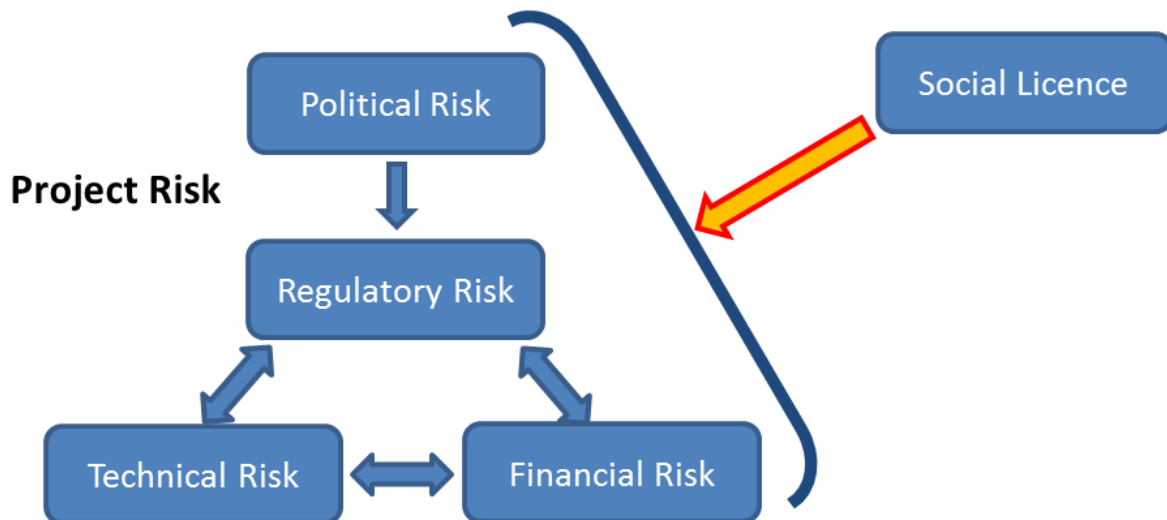


Figure 1: Social Licence and Project Risk in Unconventional Gas

The publics that will gather around these risks will be diverse; however, it is vital that industry communication is not at cross-purposes. The key to solving social sustainability problems is to develop a narrative in consultation with Indigenous and environmental groups that incorporates the diverse economic and social contributions of the industry.

This report outlines how the failure to gain and maintain social license through consultative approaches can impact both directly and indirectly on each of the aspects of project risks. The purpose of this document is to summarize what Shale Gas project developers could learn from Coal Seam Gas developments. The term risk is appropriate here, rather than hazard, because steps may be taken to control for the likelihood of these events occurring if appropriate decision-making and communication strategies are in place to learn from the mistakes of earlier unconventional gas exploration and production. Therefore, this document does not aim to provide a probabilistic assessment of the likelihood of risks occurring, but rather to canvas issues to be assessed in dialogue with potential stakeholders later. Identifying potential ‘showstoppers’ in advance is a difficult exercise. With this in mind, the report schematically outlines likely scenarios for issues and some mitigation steps in the matrices in Appendix 2.

2. What are the Social License issues identified by Coal Seam Gas activities in Australia?

Social license issues are a complex interaction of trust, power, risk and contested visions of the future. A significant issue is that the distribution of power denoted by the legislative approvals process is not matched with the distribution of real or perceived risk. In other words, a small number of people are making decisions that affect a large number others who may face significant negative impacts. This means that publics have formed around potential risks in order that they may attempt to regain a sense of empowerment and influence over decision-making.

Key points of contention for unconventional gas are clustered around:

- **Government rules and industry practices**
 - Uncertainty in the timing, location and scale of required surface activities
 - Loss of privacy and control of property access
 - Loss of control over activities that may alter the financial or other perceived value of the property
 - Compensation/royalties
- **Regional Socio-Economic Issues (particularly) in Queensland Gasfields regions**
 - Pressure on local housing: crowding out of local service sector workers
 - Local labour shortages
 - Friction between local lifestyle amenity and resource exploitation
 - Social contentions about links to land
- **Local environmental/safety risks**
 - Water resource interference
 - Aquifer contamination risk
 - Salinity management
 - Gas leakage/flaring and fire hazard
 - Clearance of vegetation for roads, pads and pipelines
 - Soil compaction and alteration of drainage patterns
 - Noise and visual amenity
 - Increased traffic and road safety risks
- **Wider environmental/safety risks**
 - Lack of authoritative measurements of fugitive and combustion emissions
 - Investment in non-renewable energy generation technologies

2.1 What does public polling data tell us about support for Coal Seam Gas in Australia?

- Concerns about the risks of unconventional gas extraction are widespread, though not vote-changing;
- Polling has largely been *ad hoc*;

- Controversies over language in polling questions demonstrate the need for independent assessments to assist in monitoring social license.

2.1.1 Public polling

A number of public polls were conducted focusing on NSW and Queensland policies in the lead up to the publication of the Strategic Regional Land-Use Policy and Queensland State election respectively. Up until this point, government policy was largely *ad hoc* in the form of 'adaptive management' around the impacts of the industry (See Appendix 3).

An Essential Poll published in late October 2011 suggested that the 'balance' frame between gas companies and landholders had failed to resonate with voters (See Appendix 1). Two polls published around the time of the March 2012 Queensland election found widespread concern about the issue. Firstly, a widely publicised Galaxy Poll published in February 2012 commissioned by The Greens found widespread support for a full investigation into the health and environmental impacts of Coal Seam Gas⁴. Secondly, a Newspoll for *The Australian* found only 33 per cent of respondents were in favour of CSG development. Of these, 11 per cent were strongly in favour. However, 40 per cent of voters were against the industry, with the remaining 27 per cent undecided.⁵

The only significant published public polling activity over the past 12 months has focused on the Northern Rivers area. A survey conducted by Southern Cross University found overwhelming opposition to the industry in the region. Respondents listed "harmful effects on water systems" as the number-one concern and "reduced quality of life" and "impacts on community health"⁶. A large proportion of the community 'also said they were prepared to change their mind if new evidence about CSG came to light.'⁷

2.1.2 More comprehensive monitoring

The *ad hoc* nature of polling demonstrates the need for a more comprehensive approach to monitoring social licence at a national and state level so policies and stakeholder strategies can be more effectively assessed for their costs and benefits. This report emphasises that social licence is dynamic, variable spatially and with differing and overlapping publics, and that active trust needs to be built from the inception of projects, through their completion and legacies. Many approaches to social licence emphasise particular good that are provided to communities (for instance, training places) as part of an overall strategy. We emphasise that measurement, evaluation and monitoring must not devolve to quantifying the success or impacts of initiatives which form part of a social licence strategy, but must encompass social licence as a totality. It is, in other words, necessary not to mistake the part for the whole, the means for the ends.

The CSIRO has conducted research into stakeholder views of social licence in the mining industry. This finding is instructive, and consistent with the approach taken in this report:

⁴ McCarthy (2011) Most Australians want moratorium on <http://www.couriermail.com.au/business/most-australians-want-moratorium-on-coal-seam-gas-says-galaxy-poll/story-e6fregmx-1226122588011> Courier Mail

⁵ <http://www.theaustralian.com.au/national-affairs/elections/support-for-csg-collapses-queensland-newspoll/story-fnbsqt8f-1226275274873>

⁶ <http://www.northernstar.com.au/news/csg-lobby-quits-poll-by-council/1526320/>

⁷ <http://www.northernstar.com.au/news/csg-lobby-quits-poll-by-council/1526320/>

“... the future of the construct was framed as potentially transformative in the way that companies and communities might relate to each other. The opportunity considered by a number of respondents was to embrace an engagement model that was based in dialogue and participation, and was people-centred, rather than transactional, business focused and paternalistic.”⁸

Noteworthy also is research being conducted at The University of Queensland’s Centre for Coal Seam Gas⁹ which seeks co-operatively to identify measures of cumulative impact of CSG activity. The researchers envisage that the process of agreeing on indicators will itself build trust, as well as providing a baseline for measurement of impact. We would support such an approach with regard to Shale Gas. The key point here is that social licence is dynamic, but as with scientific questions, it is also necessary, indeed vital, to develop a range of measurements particular to its development over time and across space. As part of this dynamic approach, the quality of processes undertaken also needs measurement.

3. General Communications Lessons from Coal Seam Gas and Carbon Capture Transport and Storage activities in Australia

a) No Issue, No Public

The *ad hoc* nature of the polling around CSG issues demonstrates insight that publics gather around issues – such as the prospect of drilling in their area. Although Shale Gas exploration and development is likely to take place primarily in remote areas¹⁰, the relative absence of people in these areas, and the lack of other land uses, does not necessarily mean that there will be less public controversy about these developments. Publics are formed around issues, meaning that issues create publics rather than visa-versa. A specific public consists of individuals who detect the same problem and plan similar behaviours to deal with the problem¹¹. Essentially it is a group of “individuals that develop a group consciousness around a problematic situation and act to solve the problematic situation”¹². In other words, there is no public ‘out there.’¹³

Such insights into the ephemeral nature of ‘the public’ are crucial for understanding how social license changes over time. Social license is fragile and intangible *because* people can become entangled by other complementary issues e.g. a person initially motivated by sovereignty issues may

⁸ Lacey, J., Parsons, R. and Moffat, K. (2012). *Exploring the concept of a Social Licence to Operate in the Australian minerals industry: Results from interviews with industry representatives*. EP125553. CSIRO, Brisbane.

⁹ Centre for Coal Seam Gas, *Cumulative Socioeconomic Impacts: Phase 1*

<http://www.ccsq.uq.edu.au/Research/cumulativesocioeconomicimpacts.aspx> (accessed 29 January 2013)

¹⁰ This report takes as given the resource potential identified by CSIRO <http://www.csiro.au/en/Outcomes/Energy/Energy-from-oil-and-gas/Shale-gas-potential.aspx>

¹¹ Jahansoozi, J. (2007). ‘Organization-Public Relationships: An exploration of the Sindre Petroleum Operators Group’. *Public Relations Review*. Vol.33, No 4, pp398-406.

¹² Vasquez, Gabriel M. (1993). “A Homo Narrans Paradigm for Public Relations: Combining Bormann's Symbolic Convergence Theory and Grunig's Situational Theory of Publics”. *Journal of Public Relations Research* 5: 201–216.

¹³ See especially Marres, N. (2005). Issues spark a public into being: A key but often forgotten point of the Lippmann-Dewey debate. *Making things public: Atmospheres of democracy*, 208-217.

become active in response to local environmental/safety risks. This means that addressing areas of identified issues in one area may do little to gain social license if they have become entangled with other complementary issues. Alliances and umbrella groups have operated to maintain such entanglements and keep a variety of social groups united with the aim of preventing industry development or expansion.

Ongoing campaigning organisations with campaigning budgets, such as Greenpeace, are professionalised, organised and coordinated. However, their campaigns are seldom a matter of ‘professional protestors’ flying into communities and out again. Rather, they tend to mobilize and publicise local matters of concern.

b) Unconventional Gas has to date lacked a strategic narrative

A strategic narrative is needed because it links economic benefits with environmental risks and industrial legacy. There is currently little in the way of a strategic narrative that underpins exploitation of CSG resources beyond its dollar value contribution to State and Federal budgets. There is also a ‘regional development’ and ‘jobs’ narrative, but these have gained little traction.

The benefits and strategic value of CSG exploitation are contested around utility of these payments, including royalty and other payments to landholders. For these groups CSG is perceived as a high risk, low reward option for which access to power in the decision making process has been largely prevented in the legislative approvals process. Given this structural background, it is not surprising then that approaches to gaining social license in the Australian CSG industry have largely failed. A strategic narrative that links to more than dollar value is essential in an SLO context for positively positioning unconventional gas projects in the future energy mix.

c) The Oil and Gas Industries (both offshore and onshore) have a common and distinct ‘risk rationality’

CSRER research shows that familiarity with different forms of risk differs across industries (our case study was on carbon capture and storage, a process being pioneered by the coal, electricity, offshore and onshore gas, oil, and other large industries such as steel and cement.) This is particularly important for communication because underlying views of how projects should proceed and who is to be involved are tacitly influenced by these views. Workforce background and training will influence how community engagement is conducted and which spokespeople are chosen to communicate risks and uncertainties. These aspects also align with decisions around who should be responsible for promulgating the strategic narrative – ideally this may be all persons associated with a project but the risks of such an approach will be evaluated differently across industries.

d) Social License is dynamic

In addition to the issues with defining social license outlined above, social license is itself dynamic and will change over the course of a project or industry. Tracking social license and the emergence of dissent around issues and how publics become entangled and motivated to action is not trivial and requires close ethnographic analysis in addition to surveys¹⁴.

¹⁴ For a case study in South America, see <http://sociallicense.com/action.html>

The metadata that can be generated from social media use is also a new and valuable tool to understand the nature of entanglement. This is a tool that can provide indicators to social license issues in close to real time.

e) Understand Culture and develop trust

Social researchers should be collaborators with industry and government from the first stage, not called in for counselling sessions when the public turns against a project. A key issue in the approach of some resource companies have failed to recognise the basic discrepancies in the distribution of decision-making power and risk. When these discrepancies exists, those members of the community facing real or perceived risk must in essence trust that those in positions of power know and understand their issues and place equivalent value in addressing them.

In social license terms, the issue is not what the public know, but how much they trust the proponent and the regulatory system to deliver the best outcome for them. In this context, trust in government and the regulatory system is a prerequisite to trust in the authority of scientific and engineering opinion. Crucially, degraded confidence in government, the proponent and the regulatory system cannot be remedied through appeals to authority in science and engineering.

The Federal Government's Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development has limitations in this context. Its power will be less in its capacity to conduct measurements than to build and cultivate relationships with relevant organizations such as those listed above. The Gasfields Commissions, similarly, will be able to assemble data, instruments and knowledge together in new ways. The insights of Actor-Network Theory on the sociology of translation are useful in this context¹⁵. That is, the social standing and power of such bodies as the Gasfields Commission and Expert Scientific Committee will be both in their capacity to define relevant questions and connect the right data to the right publics.

3.1 What can we learn from Indigenous engagement in Queensland?

- Assessing lessons from indigenous engagement is difficult because agreements are confidential;
- As in non-indigenous communities, employing locals as 'consultants' can fuel existing social divisions;
- Any agreements will be undermined by operators failing to respect sacred sites;
- Some successes have been realized where 'backcasting' approaches (as described in section 4.2 below) have been used to envision a legacy for projects.

¹⁵ See for example Callon, M. (1991). Techno-economic networks and irreversibility. *A sociology of monsters: Essays on power, technology and domination*, 38, 132-161.

Indigenous engagement was not a comprehensive process in Queensland around CSG, though it did also encompass Indigenous Land Use Agreements. There are a number of reasons for this – first the lack of successful or settled native title claims (and concomitantly the provisions in the Queensland cultural heritage legislation for negotiation to take place between the last registered native title claimants) and secondly the differences between mining activity on land which has relatively fewer Indigenous people living on or about than in many mining communities. Related to both these is the dispossession and dispersion of Indigenous populations (so often ‘language group’ was found to be a better designator than ‘people’) in areas rich with gas.

Many Indigenous people live in towns like Dalby, Chinchilla, Miles and Roma. Their interests are more reconcilable with those of townsfolk than those for who wells, access roads and other activity has a direct impact.

Social scientists such as Ciaron O’Fairchellaigh¹⁶ have examined the lack of transparency in private negotiations encompassing Indigenous engagement agreements due to their commercial import. O’Fairchellaigh argued that the failure to legislatively prescribe even broad descriptions of outcomes and processes prevented advances in industry-community relations. It is therefore difficult to quantify the impact of Indigenous agreement-making processes and consultation due to this absence of transparency¹⁷. That compounds some of the broader commonalities this paper has been describing – for instance where stories of police being called by a company to a meeting with Indigenous people circulate or Indigenous people retained as consultants or employees are ‘run out of town’¹⁸ due to existing divisions being exacerbated.

Similarly, horror stories about the destruction of sacred sites go to many of the problems industry faces in bringing cultural sensitivity and good practice to all employees and subcontractors in a context of labour market pressures and the pressure of speed to have infrastructure operational.

Players within the industries such as Western Australian Iron Ore have been more successful where they have developed broad visions for the legacy of their activities on the land, society and infrastructure. This provides an example of how regulations can deliver an upside legacy as part of licensing agreements.

3.2 What can we learn from Qld and NSW CSG?

However, on the brighter side, some of the principles which have proved fruitful for Indigenous engagement in other mining contexts, and particularly some of the theoretical frames developed by Altman and co-authors¹⁹ can prove valuable. Altman²⁰, using a governmentality approach, also

¹⁶ O’Faircheallaigh, Ciaron & Ali, Saleem (2008) ‘Understanding Corporate - Aboriginal Agreements on Mineral Development’, in C O’Faircheallaigh & S Ali (eds), *Earth Matters: Indigenous Peoples, the Extractive Industries and Corporate Social Responsibility*, Greenleaf Publishing, London, pp. 67-82.

¹⁷ It should be noted that some agreements have been collected as part of the Agreements, Treaties and Negotiated Settlements Project (see for instance <http://www.atns.net.au/agreement.asp?EntityID=5436> accessed on 10 January 2003) and this is a development that should be encouraged and a project focused on agreements around gas and land use along similar lines would be welcome. Such a project might map and thematise agreements rather than just make them available.

¹⁸ Confidential communication to Dr Mark Bahnisch from informant, 2012

¹⁹ Altman, Jon & Martin, David (eds) (2009) *Power, Culture, Economy: Indigenous Australians and Mining*, ANU E-Press, Canberra, http://epress.anu.edu.au/caepr_series/no_30/html/frames.php (accessed 10 January 2013)

incorporates and deploys the concepts of the hybrid economy and of interculturality. There are useful lessons here about recognising the inter-related processes of engagement, communication and agreement making as one that is intercultural, or in other words, characterised by both cultural plurality (including among as well as between parties and partners in dialogue) and in the significance of agreed outcomes for different parties. Here, too, understanding economies as hybrid enables the inclusion of the social and of cultural practices in the process of calculation of distributive justice which must supplement that of assigning rights and monetising them in the context of shared land use.

1. Give dialogue time

The lesson here, which is also teachable through the story of CSG (told in Appendix 3), is that cultures are overlapping and distinct, and embedded through folkways shaped by multiple determinants, including different distances, land uses, and patterns of population. It is also the case that speeds and distances and the ideas of locality are greatly variable. This reinforces not just the need for identifying and mapping stakeholders, but also adopting an approach whereby **dialogue is given time** to occur, recognising that commercial imperatives sometimes work actively against not just due process but also appropriate and prudent judgement of time.

2. 'Don't be a stranger' – understand local customs

Failure to understand and respect local customs and culture can cause points of fracture. For instance when miners failed to stop to assist a woman with a broken down utility West of Roma, or when businesses around Wandoan failed to sell water (which must be trucked in), or because miners failed to wave when other cars passed them on country roads²¹. These dimensions of communication and consultation are 'unseen' but crucial, and can be unveiled. Respect, deep listening to informants, and appropriate training and action could potentially remedy this. The appointment of locals deeply embedded in local communities has been crucial to the advancement of gas projects in NSW. Here, social embeddedness is a double-edged sword, providing key local context but also serving to fuel social unease - such as when negotiating parties and company representatives meet in town, at social functions, sporting fixtures and the like.

3. Commit to transparency

Transparency is also absolutely key. There is a direct relationship, as studies have demonstrated²², between transparent reporting, negotiating and social license. Transparency can be opposed by project management principles, but in fact ways need to found to harmonise these two imperatives. Transparency is additionally key to resolving differences which follow lines of fracture between the individual and the collective, and between overlapping individuals and collectives (allowing 'publics' to be better shaped). The intent of the Gasfields Commission aligns with these ideals of

²⁰ Altman, Jon (2009) 'Contestations over Development' in Altman & Martin, op.cit.,

http://epress.anu.edu.au/caepr_series/no_30/html/frames.php (accessed 10 January 2013)

²¹ These and other direct reports are sourced from informants accessed by Dr Mark Bahnisch during fieldwork on the Western Downs in 2012 and 2013.

²² See for instance Jenkins, Heledd & Yakovleva, Natalia (2006), 'Corporate social responsibility in the mining industry: Exploring trends in social and environmental disclosure', *Journal of Cleaner Production* (14:3-4) pp. 271-284.

transparency. It is too early to assess its practical efficacy; however, several merits of the Commission can be identified:

- It is independent from government and companies. This means that, as a stand-alone entity, it can provide impartial direction, advice and recommendations to government and industry.
- It is addressing water issues directly which has eased concerns of diverse groups. Also, it will bring parties together to resolve issues, partner with other bodies to undertake research where an identified need exists and convene advisory panels as needed²³.
- It provides the opportunity to redress potential power imbalances in negotiations between landholders and gas companies

While the grain has to be worked with, it is important that the communication and community dividends are not captured by already established publics and that the process itself builds capacity while being seen to be open and fair. Similarly, the form and transmission of information, as much as its content, must be heeded. Here again, there are good precedents (for instance with BHP's approach in some localities, and work done in the field of rural resilience) - mapping and learning from best practice within guiding principles is a great start.

4. Reconcile the internal risk rationalities of the industry with public expectations.

Managing uncertainties around well production times in addition to the parameters of risks associated with hydro-geological modeling are core business in oil and gas. However, these must be communicated to the public in a way that understands its expectations not just of companies (in the abstract) but of science and technology. Local knowledge (both indigenous and non-indigenous) of waterways and other features may be highly consequential and should be ignored at operators' peril.

A significant and unresolved issue in New South Wales is that exploration activities are often conducted by small organisations whose business model is to identify and prove up a resource before selling on to a more established production company. This means that initial exposure of the community to the sector is often via high-risk short-term speculators. While this is an effective technique of effectively outsourcing exploration risk for producers it creates issues for industry-wide social license. This is not to say that larger operators have been immune to criticism in Queensland. Community regard for both Australian and international operators varies widely depending on the kinds of cultural exposures outlined above.

4. A Way forward? Elements of a Shale Gas Communication Roadmap: Aiming for more than tolerance

The aim is to move away from a target of public tolerance of the industry, where social license can be easily lost, to one that enables acceptance and advocacy of the industry and minimizes the frequency and legitimacy of dissent. The key points of contention for Unconventional Gas listed in

²³ See the statement from the Minister here:
http://www.parliament.qld.gov.au/documents/hansard/2012/2012_11_27_WEEKLY.pdf (accessed 12 Jan 2012)

section 2 operate at different spatial scales from the local (such as noise and visual amenity) to the global (such as greenhouse gas emissions). This means that people from the local to the global can feel that they are directly engaged by any project, or feel that they are supporting or defending others impacted by a project. To reduce the chance of entanglement between publics at these different spatial scales it is important to consistently address issues at these different spatial scales (remember – ‘no issue, no public’). In response to this our approach is to focus on the collaborative development of a globally and nationally relevant strategic narrative for the industry that creatively addresses issues of concern (Sections 4.1 - 4.3), along with a set of devices for building trust and social cohesion at the industry and project scale (Section 4.4).

Shale gas potential has been identified in both highly remote (eg. Canning or Cooper Basins) and highly populated areas (eg. Perth, Ipswich and Maryborough Basins). These distinct areas bring different challenges and opportunities such as proximity to infrastructure, number of directly affected landholders, number and characteristics of residents in proximity to potential drill pads.

The language used to discuss issues is important because it reinforces a narrative that teaches these publics – both urban and remote – how to think about issues. In recent times the rhetoric of ‘Balance’ and ‘Co-existence’ have come to dominate the political lexicon. The underlying assumption here is that different social groups’ views of the world should simply be tolerated and it is the regulators’ role to reconcile these competing views.²⁴ As discussed above in section 2.1, the concepts of ‘balance’ and ‘co-existence’ are unlikely to reassure publics who have already mobilized around these issues. A more strategic narrative could position unconventional gas more effectively in public consciousness.

The telling thing about the rhetoric of ‘Balance = winners and losers’ is that it positions thinking in an adversarial context that virtually eliminates discussion of the opportunities to build mutual value. This is of deep concern if the ideal performance target for social license is that government and the community take ownership of advocacy for the project.

4.1 Developing a Justification for the Industry

Rather than ‘balance’, the challenge of collaboration is not simultaneous project development, but rather to create the best possible legacy from a finite resource opportunity. Government and industry officials using terms like ‘Balance’ and ‘Co-existence’ undermine the capacity for a lasting strategic upside from unconventional gas. Given the issues with CSG exploration cited above, the ‘upside’ of further unconventional gas exploration must be communicated and positioned as more than simply royalties.

Developing a strategic narrative around renewable energy has the potential to build confidence in government, regulators and industry. The key idea here is that public acceptance of risks relies on an ability to judge it accurately, and see that taking these risks are part something worthwhile.²⁵

Existing Justifications for Gas Production and Use

²⁴ This is the approach articulated by the influential Regulation School, see especially Lipietz, A. (1987). *Rebel sons: the regulation school. an interview with Alain Lipietz conducted by Jane Jenson, French Politics and Society*, 5, 18.

²⁵ See especially Stark, D. (2009). *The sense of dissonance: Accounts of worth in economic life*. Princeton University Press;

There are a number of existing justifications for the Australian gas sector – both conventional and unconventional. These existing justifications are summarised below:

a) Energy independence: ‘We have large gas reserves and can live on Gas for a long time’

This is an important justification at the national level in the United States, which was facing a need for increasing LNG imports in the absence of the rapidly developing shale gas sector. This justification is also actively in use at the state level in NSW by both the state government and CSG industry. Gas is largely imported in NSW from South Australia and Victoria, with only 6% of gas being produced domestically from the Camden CSG Project in the Sydney basin. This justification highlights the decline of gas production in South Australia and Victoria as a threat to supply and promotes development of indigenous CSG resources rather than switching to Queensland based CSG supplies.²⁶

b) ‘Gas will provide us with economic prosperity through investment and exports on the international market’

This is a chief driver for the justification of the Australian export LNG sector based on both conventional gas from the North West Shelf and onshore CSG development in Queensland.²⁷

c) Gas as part of a low emissions future

This justification comes in a number of different forms that imply different perspectives of what actually is a ‘low emissions future’ and how gas may be used within this context.

- i) **Gas is a cleaner fuel, both less particulate and CO₂ emissions than coal or oil.** This argument is used both domestically and in the justification of export sectors. The justification is often used by the gas industry without reference to the scale or timing of emissions reductions with regard to radiative forcing of CH₄ relative to CO₂. The measurement of fugitive emissions remains a central challenge and the efforts by the Environment Defense Fund and others in the United States are moving in the right direction to build credible and transparent systems to publicize data²⁸.
- ii) **Gas is an important transition fuel to a sustainable or renewable energy economy.** The justification highlights the ability of fuel switching from coal to gas to provide a lower emissions bridge while renewables build scale. The justification also highlights the role that gas can play in providing peaking plant to enable a higher penetration of renewables into the grid, and a shift towards more efficient distributed co and tri-generation. Some advocates go further to include a transition to a renewable gas network supplied by gas from biological sources.²⁹
- iii) **Gas with CCS could be part of a long term clean energy future.** This justification highlights both the large scale of gas resources and the rapid initial emissions

²⁶ <http://www.businessspectator.com.au/bs.nsf/Article/NSW-Australia-coal-seam-gas-supply-energy-pd20130114-3WRWJ>

²⁷ <http://www.appea.com.au/csg.html>

²⁸ See especially <http://blogs.edf.org/energyexchange/2013/01/04/measuring-fugitive-methane-emissions/>

²⁹ <http://www.cityofsydney.nsw.gov.au/environment/Trigeneration.asp>

reductions that are delivered by a fuel switch from coal to gas. Importantly the justification also highlights that the emissions intensity of gas will need to be reduced in the longer term to be compatible with international emissions reduction scenarios and that this may be possible in large scale stationary applications through use of CCS.

d) Gas as an important industrial and transport fuel feedstock

This justification highlights the properties of gas as a chemical feedstock for the production of plastics, fertilisers, explosives and synthetic fuels and lubricants. Gas is therefore more than an energy product and is an important base feedstock for valued industrial, agricultural and consumer products.

4.2 Communicating energy innovation

Recent advances in computational humanities allow for rapid, comprehensive assessments of the dynamics of language over time³⁰. As Figure 2 shows, the concept of ‘renewable energy’ is far more commonplace in print than ‘clean energy’ or ‘low carbon’, the latter referring primarily to steel production processes. This does not mean that the language of clean or low carbon energy should be avoided, but rather that ‘renewable energy’ is more commonplace and easily recognizable.

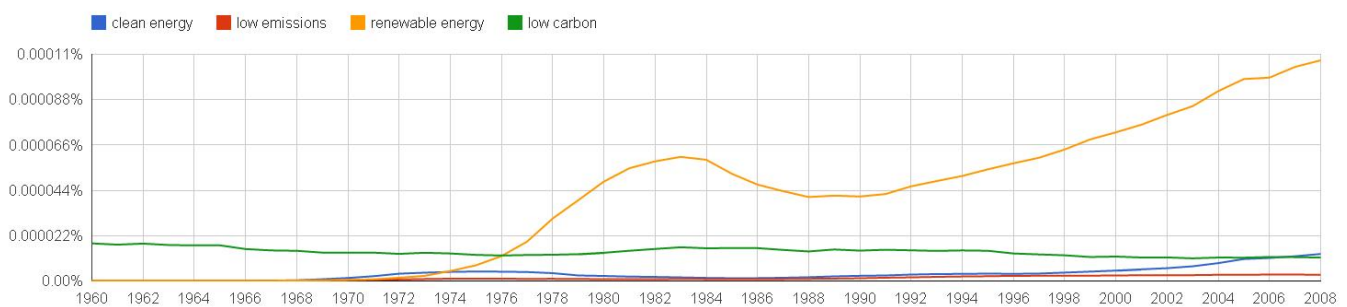


Figure 2: Comparison of ‘clean energy’, ‘low emissions’, ‘renewable energy’ and ‘low carbon’ in a representative sample of 4% of all English language books. Graph produced on <http://books.google.com/ngrams>

Moving from Justification to a Strategic Narrative in support of social license

Justifications are the lifeblood of public discourse. Justifications are used by social actors to mobilize would-be supporters and contest policy³¹. In this context, the pathway to the development of a strategic narrative must support social license by engaging with social actors in a way that public support can be more effectively mobilized.

³⁰ See <http://books.google.com/ngrams> for a full explanation of sampling method, see: Michel, J. B., Shen, Y. K., Aiden, A. P., Veres, A., Gray, M. K., Pickett, J. P., ... & Aiden, E. L. (2011). Quantitative analysis of culture using millions of digitized books. *science*, 331(6014), 176-182.

³¹ See also Stark fn.25

Existing justifications for the gas industry have been borne out of public discourse, relying – sometimes exclusively – on narrow definitions of the economic contribution of the industry. As recent work on innovation has shown, keeping many justifications ‘in play’ in public discourse is vital to developing new and innovative products³². We use the term ‘strategic narrative’ to refer to an innovative set of justifications for an industry or production process that keeps multiple forms of justification in play.

Examples of strategic narratives around particular industries include the French civil nuclear program³³ and the computer industry. The French civil nuclear industry enjoys strong support in France despite its scale and in contrast to many other nuclear nations. The French industry has a strategic narrative of energy independence for a resource poor state, French engineering supremacy for large iconic projects, and lately, a solution to climate change. The computer industry has a strategic narrative around “smaller, faster, cheaper, better” that overwhelms issues with obsolescence and poor long term battery performance for mobile devices. In both the French and American cases, what has been produced is not only science and technology, but also promises of national grandeur and, indirectly, international independence (both had strong backing from Defence establishments). In these ways, both of these industries retain social license because their value proposition is seen as an ongoing and enabling contribution to desirable futures. In both cases, national economic prosperity – often through spillovers to military applications – and the productive potential of industrial expertise have proven vital justifications when challenged in the public arena.

In the case of unconventional gas the strategic narrative must also deal with the complexity of spatial and temporal scale. This is because some issues and therefore publics are clustered around short term local issues, while others are clustered around longer term and/or global issues (see Section 2). Effectively dealing with this complexity is facilitated by thinking of the strategic narrative as a **hierarchy of detail rather than as a series of different narratives for different audiences**. This ensures the alignment and consistency of the narrative and prevents pieces of the narrative at different spatial and temporal scale from becoming contradictory.

Discussions will likely focus on issues such as benefits, impacts, accountability, values and post-production planning. Those facilitating the engagement process should prepare by examining questions such as:

1. What are the **cultures, customs, values** and long term **visions** of communities and potential dissenting publics?
2. How can the **legacy** of Shale Gas exploitation be **aligned** or framed within with these values and long term visions?
3. How can Shale Gas exploitation be a significant **enabler** or **launch pad** for long term community visions that outlive the Shale Gas sector?
4. What are the most effective mechanisms of **collaboration** with the wider community to deliver these values and visions?

³² See Stark, D. fn 25

³³ See Hecht, G. (1999) *The Radiance of France*. MIT Press. <http://mitpress.mit.edu/books/radiance-france>

5. How will the community understand and **trust** the commitment of the Shale Gas sector to the emerging collective narrative?

Using Backcasting to Develop a Strategic Narrative

'Backcasting' is an increasingly used technique for developing strategic narrative in complex environments. It focuses planning and policy around delivering a vision of the future that emerges from problem solving collaborative interactions between stakeholders – in the case of unconventional gas this would include governments the industry and the wider public. Importantly this in principle vision of the future sets the direction and impetus for the collaborative development of 'upside' for society and acts as a lens for determining the effectiveness of industry in fulfilling corporate social responsibilities. In essence this creates quasi-contractual parameters for the industry that justifies its value to the public. The industry and the regulator also have a clear concept of public expectations on them for what regulation and operations need to achieve to maintain this social contract.

Developing collaborative values-based in principle visions of the future *does not* mean that Backcasting aligns different, incommensurable values. Rather the process seeks to allow different stakeholders to understand the situatedness of their values and creatively develop trajectories which have resonance across cultural perspectives.

Backcasting as a tool was originally developed in the European energy sector. It has since found wider application as a tool in European transport sector planning, where high fuel and vehicles taxes along with large investment in public transport are relatively well accepted as a demonstration of values clustered around energy, economic, environmental and social responsibility. Interestingly, these self-imposed constraints have arguably benefitted rather than undermined the global position of European auto manufacturers by encouraging innovation and problem solving in response to these societal constraints.

While backcasting was originally developed as a back room analytical planning tool, in more recent times 'Participatory Backcasting' or 'Second Generation Backcasting' has been developed and integrates the analytical with the social. The tool is based on stakeholder engagement and social learning and is targeted at developing broadly supported outcomes. A process for this may look something like:

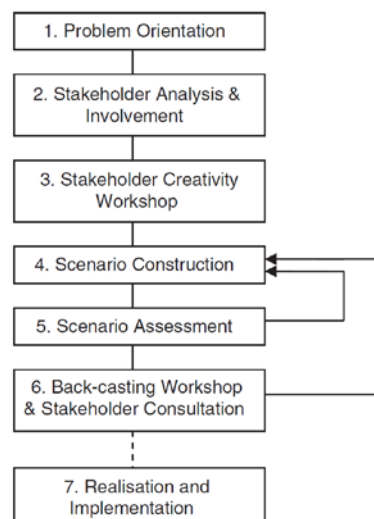


Figure 3: A process for Participatory Backcasting³⁴ with application to the development of an unconventional gas strategic narrative

The approach highlights the initial importance of framing with the first step being problem orientation. To effectively engage with likely dissenting publics it is important to ensure that the initial frame is broad enough to encompass options that are of importance to dissenting value frames. An analysis of issues raised in relation to CSG, Shale Gas and broader fossil fuel industries suggests that there are major criticisms of a potential Australian Shale Gas sector that would have broad public awareness:

1. Contribution to greenhouse gas emissions (nuclear to gas switch in Europe is increasing emissions and gas without effective CCS does not cut emissions enough over coal to be more than a short term measure if international emissions reduction aspirations are to be met);
2. Undermining or distracting from investment in renewables (a short term boom in the resources sector undermines and distracts from Australia's window of opportunity to become a global renewable and cleantech industry player);
3. Water use, impacts on the environment and food security;
4. Development pressures on regional infrastructure and communities;
5. A fear that government serves corporations, rather than The People.

These concerns suggest that initial problem orientation should be wider than simply a discussion of unconventional gas. One option that shows merit is **orienting the problem around creating options for sustainable regional and clean energy development**. This positive platform allows stakeholders to examine and learn about unconventional gas in a context of other regional opportunities, challenges and energy technology platforms. In this approach the shale gas sector has an opportunity to develop an agreed strategic narrative through engagement, creativity and collaboration with diverse stakeholders on its own merits as a recognised contributor to a broadly valued future.

An important aspect of this approach is that it allows a full, informed and creative discussion of the shale gas opportunity in the collaborative context of addressing the challenges of greenhouse gas emissions, low emission energy technologies (including widely valued renewables) and sustainable regional industry development. An unconventional gas sector in rural and remote Australia has a broad basis to engage in this collaborative approach as it has the capability of bringing a number of key strategic enablers to the sustainable regional and clean energy development table, including:

³⁴ Quist, J. and Vergragt, P. 2006 Past and future of backcasting: The shift to stakeholder participation and a proposal for a methodological framework. *Futures*, **38**:1027-1045

- 1) Financing networks, regional investment and cash flow;
- 2) Technology, skills, research, training, firms and business networks;
- 3) Infrastructure planning, approvals, construction and management;
- 4) Policy and regulatory innovation.

Examples of the directions that the creativity of diverse stakeholder groups may take could include:

- Industry contributions towards a clean energy innovation sovereign wealth fund that includes development of regionally relevant renewable energy industries;
- Commitments to use clean energy sources for gas well development, gas extraction and distribution and to mitigate fugitive emissions;
- Commitments to initiate a 'renewable gas' program to stimulate technology development for a future renewable gas industry (similar to the renewable energy target for electricity);
- Making pipeline and infrastructure corridors available for clean energy infrastructure e.g. enabling co-location of HVDC cabling with pipelines would assist future solar or geothermal industry development;
- Innovation targeted at use of depleted wells and/or drilling technology for a Hot Fractured Rock geothermal energy industry;
- Expansion of innovation in the policy approach to other sectors with similar social license issues such as the broader petroleum and minerals sectors.

Crucially, the substance of the narrative has to emerge from the engagement process, rather than being imposed *a priori*. The above are merely examples to show that the strategic narrative may emerge in many guises that are outside the realm of current industry justifications. Importantly, there are options available which mean that a shale gas sector is not necessarily incompatible with those that on the surface would seem to have divergent perspectives.

In addition to developing the social learning required for a broadly accepted strategic narrative, the Participatory Backcasting process is a forum for showing commitment and developing trust between stakeholders. In essence commitment means the time of senior executive within stakeholder organisations. Direct participation of stakeholder senior executive sends the signal that a strategic narrative is important to the organisation and has a direct and accountable mechanism for adoption as policy within the organisation. Failure to engage, however, sends a clear signal that the strategic narrative is unlikely to guide the approach of the stakeholder organisation and that trust is right to be withheld.

It is worth acknowledging that the Participatory Backcasting process broadly parallels the initial stages of the Australian policy development process and advances as a cycle of reflection, identification of issues and policy development (Appendix 4). While the participatory backcasting

process is an excellent tool for policy development, it is important that the forum has a flat, rather than hierarchical structure. This removes incentives for stakeholders to attempt to control the forum, and leaves the policy development process free to pick up ideas from the forum process that have developed broad collaborative support. The forum would have no formal outputs, rather to generate collaborative opportunities between the actors.

Development regulation in the Australian context is often focussed on protecting the community and the environment from the impacts of development rather than maximising the ‘upside’ or value add of particular developments of industry sectors. The strategic narrative approach seeks to build value as well as mitigate harm and so requires a regulatory mechanism capable of engaging with these types of outcomes. Agreements between mining companies and indigenous communities in Western Australia may provide a model framework enabling regulation for industry ‘upside’ – the limitations outlined above in Section 3.1 notwithstanding. These agreements are negotiated around building benefits for local communities and form part of development consent arrangements. How this type of agreement can embrace and encourage the broader and dynamic nature of upside innovation has not been well tested. Care should also be taken to ensure that regulatory approvals effectively integrate across state and federal jurisdictions and wider policy platforms.

4.3 Devices for Building Sustainability and Social Cohesion

While the task of a strategic narrative is to align the operation of the industry with the delivery of broad societal value, the industry must also be well managed to build positive relationships with those more directly with the day to day operations of the sector. This includes those creating dialogue between industry players, as well as communities, families and individuals exposed to gas extraction and transmission industry activities. In this context it is important to include those people who may not be seen as being directly connected to industry activity, but live in communities that are substantially changed by the increase in development and activity associated with the exploitation of unconventional gas.

This section discusses a number of techniques and practices that could either enhance the social license of future unconventional gas, or have already reducing social impact and supported social cohesion in CSG affected communities.

These devices may be grouped according to the broad problems outlined below associated with access:

1. Gaining access to resources:

- i. **Build a strategic narrative** (as outlined above)
- ii. **Establishing an independent collaborative learning forum** focussed on developing the ongoing strategic narrative for the Shale Gas sector: The forum should be supported with a secretariat to analyse social license. This would assist in bringing upside opportunities to the forum. The forum could further be

supported with a social media outreach program aimed at identifying publics as they develop and developing an ongoing dialogue.

Experience with Transport Planning³⁵ shows that, paradoxically, an important mechanism of success for the forum is that it has no statutory or other power in itself. Because the forum has no power there is no point trying to gain influence within the forum and an effectively 'pre-political' space is created where it possible to create and test innovative ideas. While the forum has no power in itself, the actors within the forum have power of their own that is exercised regularly. The forum therefore provides a mechanism by which the forum actors can learn from each other and build collaborative relationships.

- iii. **Ensure a Code of Practice for Industry is developed** in advance. This should sit *within* the strategic narrative and build on the lessons from CSG, including: do not force access; negotiate through a body like a Gasfields Commission where necessary.

2. Environmental

- i. **Establishing a Citizen Science training and reporting** scheme to monitor environmental impact and performance. This will address limitations of the Expert Working Groups approach outlined above.
- ii. **The broader lesson here is for policy-makers to build 'witnesses' not necessarily supporters:** Social scientists have repeatedly shown that facts are constructed by building alliances and demonstrating the efficacy of technologies to relevant 'witnesses'³⁶. These facts and technologies are understood in different ways by different parties. For example, demonstrating the veracity of a monitoring technology such as a seismic readout builds trust between project proponents of a Carbon Capture and Storage (CCS) activity and local landholders. Farmers may not necessarily support CCS but trust can be developed around specific demonstrations of technological competence.

3. Proactively manage socio-economic impacts:

- i. Local job losses, housing pressures and drains on service sectors are all nested problems that can largely be anticipated and managed. One way of addressing such issues is to require SIMPs (Social Impact Management Plans) to be

³⁵ The concept of such a forum has been trialled for transport planning, primarily in Europe, see: Miola, A. [Ed] 2008, 'Backcasting approach for sustainable mobility', European Commission, Joint Research Centre, Institute for Environment and Sustainability; Baumann, C. & White, S. 2011, 'Collaborative stakeholder dialogue: a pragmatic pathway towards sustainable urban transport development', paper presented to the *3rd World Planning Schools Congress*, 4-8 July 2011, Perth, Australia.

³⁶ Haraway, D. J. (1997). *Modest witness@ second millenium. FemaleMan meets OncoMouse: Feminism and technoscience*. Routledge; Shapin, S., & Schaffer, S. (2011). *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life (New in Paper)*. Princeton University Press; Latour, B. (2004). *POLITICS OF NATURE*. Harvard University Press.

developed as part of licensing conditions. In CSG, these will represent a large investment in Western Queensland that will see hundreds of millions of dollars flow into local communities and infrastructure. A key learning from these areas is that social and infrastructural issues should be dealt with together.

4. Communication Lessons

Furthermore, the following principles of communication should be adopted:

1. Communication should be as transparent, accountable and multivocal as possible, seeking out under-recognised participants and recognising the existence of multiple social fields;
2. Communication must focus on emergent *loci* of publics as well as being coherent and not talk at cross-purposes;
3. Attention must be paid to cultures, 'folkways' and to differences in style and form in communication and co-government;
4. The process of agreement making should be recognised as intercultural, with agreements negotiated and capable of being understood in terms of Indigenous and cultural meanings as goods as well as securing distributive justice;
5. Transparency is secured by adoption at all stages of timelines, recognising that timelines can be perceived differently by industry, government and local communities;
6. Transparency is secured actively building audiences for data collections and management; and by the collation and thematisation of documents according to principles and interests;
7. Accountability through measures of social license, for example demonstrating how it passes through distinct phases of acceptance and withdrawal;
8. A commitment to more comprehensive monitoring, as recommended in section 2.1.2
9. Cultural and social dividends must be allocated according to principles of shared decision-making. Shared decision-making is a process that must start at the outset of activity, and not end.

These principles are translatable in various ways to communication, shared decision making and co-operative management strategies and plans.

Appendix 1: Public Polling Data

Essential Media Poll October 31, 2011

Q. There is currently debate over the exploration and extraction of coal seam gas from farming land, particularly in NSW and Queensland. Do you think Governments should restrict mining of coal seam gas on farming land or do the current regulations balance the interests of farmers and mining companies?

	Total	Vote Labor	Vote Lib/Nat	Vote Greens
Should restrict coal seam gas mining	50%	52%	48%	74%
Current regulations balance interests of farmers and mining companies	20%	21%	23%	6%
Don't know	30%	26%	29%	20%

50% think coal seam gas mining should be restricted and 20% think current regulations balance interests of farmers and mining companies. 30% have no opinion.

Labor voters and Liberal/National voters hold similar views but 74% of Greens voters want restrictions.

Those most in favour of restrictions were aged 55+ (61%) and respondents from Queensland (56%) and NSW (54%).

Appendix 2: Issue and Risk Matrices

Risk, in this context, refers to consequences x probability. The report uses four colours: **green** to identify a risk that could be managed using existing procedures; **yellow, orange and red** refer to risks with small, moderate or high consequences respectively for the industry or public. The assessments of these risks are based on expert assessments from previous analogous events. Consequences for some stakeholders are greater than for others, thus the coloured risk rating applies to an aggregate of impacts for governments and industry.

Political Risk Assessment

		Event Likelihood	Assessment of Consequences	Description of Consequences and Likelihood
Issues	Industry-wide bans	Highly Unlikely	Small for public; potentially moderate to economy; Catastrophic for Industry	Public faces possible economic opportunity cost but no otherwise adverse effects, depending upon economic modelling and other measurements
	Cross-fertilisation of campaigns	Likely	Moderate to great for publics; Moderate to large for industry	Anti-coal or gas campaign resources diverted to fighting industry leading to moratoriums and other issues outlined below
	Moves to quarantine land	Likely	Same effect as ban	As above, per regional economic development narrative
	Moratoriums and/or delays in	Likely	Small for public; potentially moderate to	Significant delays in the development of the

	enabling legislation		economy; Large for Industry	industry; increased capital risks
	Over or under-regulation	Likely	Unknown economic impacts	Increased costs felt immediately (if over-regulated) or later with social license backlash (if under-regulated).
Reliability of your Assessment	<p>These assessments are derived from consideration of the development of minerals, petroleum and forestry sector developments nationally and internationally.</p> <p>Our risk assessment is highly dependent upon economic, environmental and engineering considerations which are still under determination for the Shale Gas industry.</p> <p>Dependent upon economic assessment and parameters of cost/benefit</p>			
Mitigation Options	<p>Mitigation options are interactive for each of the risk areas mentioned in this and the following tables and are discussed throughout the report. In particular the risk mitigation option focuses on:</p> <ol style="list-style-type: none"> 1. Development of an overarching strategic narrative for the shale gas industry that focusses on collaboration with other sectors of lasting value to the Australian public 2. Collaborative engagement at a project level with local stakeholders 			

Regulatory Risk Assessment

		Event Likelihood	Assessment of Consequences	Description of Consequences and Likelihood
Issues	Challenges and approval delays for projects	Likely	Small for public; potentially moderate to economy; Large for project	Public faces possible economic opportunity cost but no otherwise adverse effects, depending upon economic modelling and other measurements
	Excessive or inappropriate consent conditions	Likely	Small for public; potentially small to economy; Potentially Large for project	Significant delays in the development of the industry; increased capital risks
Reliability of your Assessment	The veracity of these assessments will be location and context specific. Remote and urban projects will vary greatly in the consent conditions and forms of challenges to licensing and consent conditions.			

Technical Risks Risk Assessment

		Event Likelihood	Assessment of Consequences	Description of Consequences and Likelihood
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Issues	Restrictions in Engineering options	Likely	Small for public; Potentially large for project if other economically viable options not available	Restrictions of some practices and/or siting of infrastructure. Impact of this will be project dependent.
	Civil disobedience issues (protests, sabotage, worker endangerment)	Very Likely in highly populous regions	Small for public; potentially medium for project	Significant delays in the development of the project; increased capital risks; risk of escalation to other projects and industry if not handled well
	Labour recruitment issues	Likely	Small for public; potentially medium for project	Recruitment and retention of skilled workforce is increased. Impact dependent on competition for labour
Reliability of your Assessment	The veracity of these assessments will be location and context specific. Impacts will be largely dependent on the cost and availability of acceptable engineering alternatives.			

Financial Risk Assessment

		Event Likelihood	Assessment of Consequences	Description of Consequences and Likelihood
Issue	Increased uncertainty premiums on cost of capital	Likely	Project capital more expensive and difficult to obtain	Increase in project financial costs and expected returns for viability
	Reduced cash flow to service debt	Likely	Increased likelihood of project financial failure	Increased project costs and delays reduce cash flow and make it more difficult to service project debt
	Activist communication campaigns and legal challenges against financiers	Likely	Increase in cost of capital, project delays	May impact on viability of the project
Reliability of your Assessment	The assessment of likelihood will also be affected by national and global politics and election timing, as well as the general availability and competition for capital from other sections of the market.			

Appendix 3: Case Study: 'Adaptive Management' and subsequent policy measures in Queensland

Coal Seam Gas activity in Queensland emerged as a fast and furious series of developments that came on stream very quickly, with investment preceding capacity to deliver. The former Labor government was supportive of the industry, primarily because of its potential contributions to employment, growth in state domestic product and revenues³⁷. There was recognition at government and stakeholder level that environmental, land use and community impacts would need to be managed carefully and sensitively, but the timelines necessitated the adoption of an 'adaptive management' strategy³⁸ in the regulatory framework. In this context, adaptive management referred to the *ad hoc* negotiation, measurement and management of social and environmental impacts. The social and economic impacts of the industry could largely be managed through 'make good' provisions, rather than explicitly anticipated through license conditions.

For a variety of reasons, a whole of government approach was not adopted, and regulation was complex, with four Acts intersecting (the earliest being the *Petroleum Act 1923*). To give a feel for the complexity exploration and extraction were conditional on environmental and planning approvals, 'beneficial use', Indigenous cultural heritage, mining tenements, water management plans, and in some instances, certification of projects by the Coordinator-General. From the perspective of industry, the process was overly complex and "glacial"³⁹. From the perspective of government, time and experience was needed to mitigate potential risk and to discern a framework which would be suitable.

Representation of community and Indigenous stakeholders in defining social impacts and priorities was problematic, and it is fair to say, not prioritised in a climate characterized by concern around science, economics and law.

An additional reason was the novelty of extractive industries *on* (rather than adjacent to) land that was assumed by many to be secured for other uses. The distinction between 'farming' and 'mining' land gained salience and has had strong social impacts. In the mix also were the reforms to local government, a legacy issue for Peter Beattie's government establishing sustainability one that met fierce resistance and brought new public concern to bear on regional bodies just prior to the onset of gas activity.

While it might have been anticipated that multiple land use precedents – whereby gas companies co-exist with other users – would be created through the native title process, in fact much of the Surat Basin had no settled native title holders, and state legislation governed the nexus between Indigenous stakeholders and gas and mining companies, revolving around heritage rather than shared management and activities.

³⁷ Queensland Government (2012), *CSG Opportunities: Economic Benefits*, <http://www.industry.qld.gov.au/lng/economic-benefits.html> (accessed 10 January 2013)

³⁸ Swayne, Nicola (2012) Regulating coal seam gas in Queensland : lessons in an adaptive environmental management approach? *Environmental and Planning Law Journal*, 29(2), pp. 163-185. (Accessed online at <http://eprints.qut.edu.au/49293/> on 10 January 2013)

³⁹ Collings, Troy (2012) *Regulating Coal Seam Gas: No Silver Bullet Solution*, <http://larvatusprodeo.net/archives/2012/03/15/behind-the-seams-regulating-coal-seam-gas/> (accessed 10 January 2013)

Social license therefore was problematic to establish let alone maintain, as its vectors covered several complex spheres of activity, leading to a fracturing of communication along lines of least political resistance. For instance, claims that CSG extraction technology and impacts on water were different and less risky than in the United States could not satisfy the growing concerns the net effect of which was a proliferation and hardening of bad news stories. Similarly, community divisions (including between town, hinterland and country) in different social sectors where consensus often operated as a norm began to open up, and were inadequately managed as distributive economic gains seemed disproportionate to perceived harms.

The Queensland experience with CSG showed there was an inadequate understanding of the 'bush telegraph'. That is, the way in which information circulates and could travel quickly across large distances and help mobilise a co-ordinated community view. In this way, reputations were lost because of the occasional nature of communication. Thus, a frame developed which perceived the impact of CSG as largely negative. This then could easily be reinforced by activist actors and environmental groups developing around both city/Green and rural/Farmer nexuses.

The process of negotiating access with land holders was an individual rather than a collective one, and horror stories of failed communication with vulnerable landholders were prone to be inserted into an overall oppositional view. The difficulty of establishing reliable scientific benchmarks and the bureaucracy (largely located hundreds of kilometers away in Brisbane) only served to negate further attempts at communication and consultation from industry, government and to some degree stakeholder bodies.

This government at a distance did not always notice that farming and regional cultures are shaped by patterns of land use (different 'countries') which can change quite abruptly along lines of cultural affinity, kinship and communication. So, stories about the virtues of gas and co-operative management on cattle and very extensive mixed use properties (with cattle becoming more pervasive as one moves further West from Brisbane) were not meaningful in areas of more closely settled and/or marginal country. Nor were they effective to interlocutors who were not farmers. Division was also created as some farming stakeholders on the 'good news' properties were organised by government and organised themselves into representative and consultative entities, where there was a clear signal that if water and co-use issues could be satisfactorily resolved and settled, support for CSG would be forthcoming. In fact, "too many publics" were being created, and single messages about 'Jobs' or 'Training' (for example) became either noise or evaluated as hostile.

The global versus the local was increasingly regarded as a set of tensions of "them" versus "us". Decision-making concentrated in Brisbane at one level, and interfaced with world markets and centres of capital and ownership at another, created a perception that 'rural Queensland' or the 'Western Downs' were wrongly treated as local entities, one reinforced by the rational-legal nature of state decision making.

The upshot of all this contestation is a decomposition of the initial economic justification for the industry, and subsequent disputes about the science of groundwater, the legal rights of access. Conversely, the terrain becomes politicised and government and industry are tempted to, or can be

seen as fighting for territory and its governance with activist groups and communities, which tends to further fan the flames of activist unity.

Some of the tension involved here released itself as CSG became an ‘event’⁴⁰ during the state election campaign which could then be managed by the media, and the two party system. The Liberal National Party also adopted, as part of its political and policy strategies, principles which symbolically protected some areas of high agricultural value and contained potential conflict in regional agreement-making. Similarly, the Gasfields Commission can be seen as a conciliatory move, accompanied by exhortations (also articulated influentially by then Labor Treasurer Andrew Fraser⁴¹) to industry and companies, to take more responsibility for securing their own social license, and for high-level commitments to distribution of rents deriving from resource extraction back to communities over time.

Thus, the intention was to try and taking some of the heat out of some of the disputes around ‘Lock the Gate’, as work is done through both the Gasfields Commission and the Commonwealth Independent Expert Advisory Committee on water⁴², which is rightly identifiable as a commonly hot pressure point. Moreover, as various stakeholders adjust to the presence of new bodies such as the Commission, gas extraction on rural land has become normalised. There is also a heightened awareness of the diversity of communities and the social needs they have, reflected in scientific and social scientific work undertaken by collaborations of industry, government, CSIRO and companies.

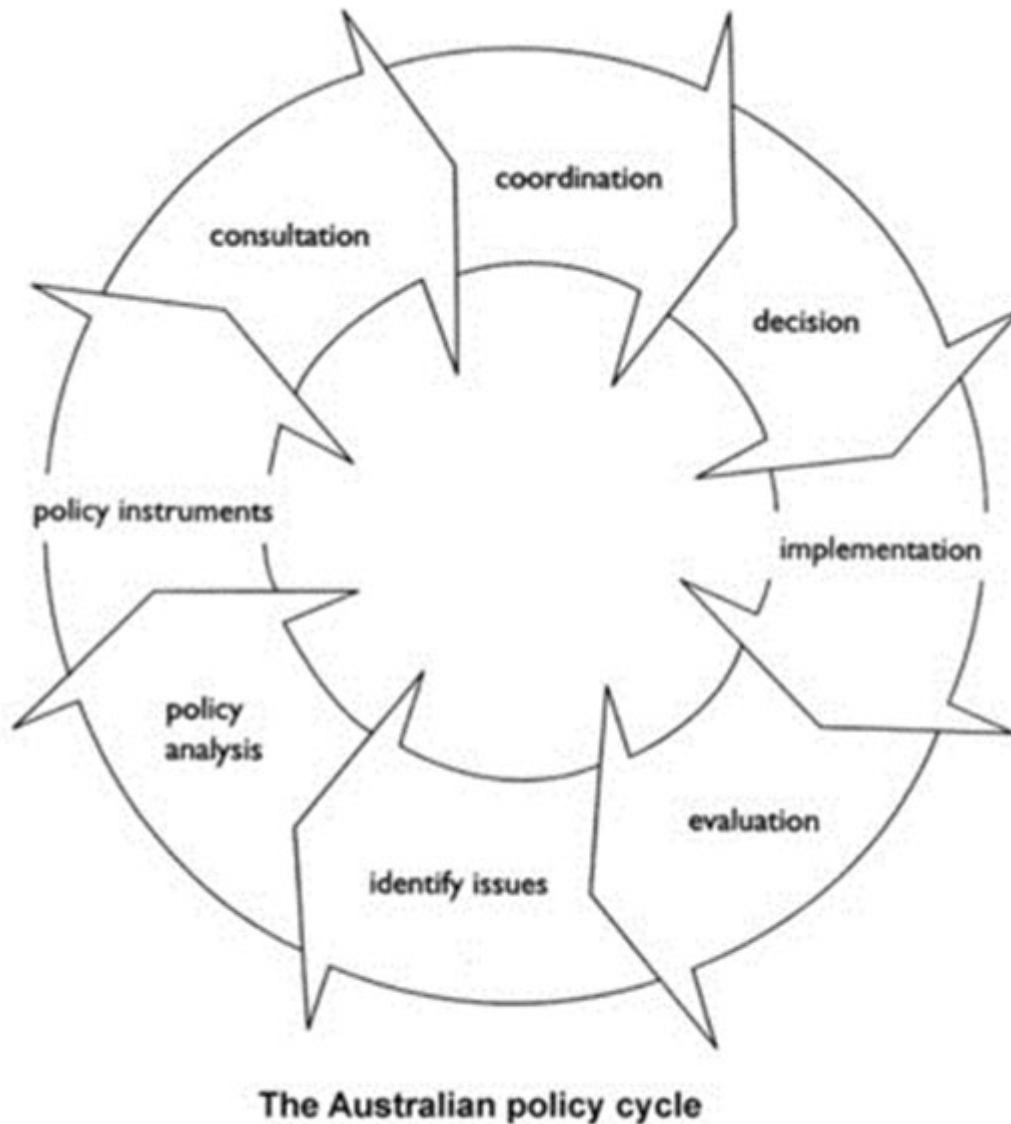
At the time of writing, legislation to finalise the Gasfields Commission and the regional agreement framework is still before the Queensland Parliament.

⁴⁰ Bahnisch, Mark (2012), *Coal Seam Gas and the politics of the future*, <http://blogs.crikey.com.au/the-wellhead/2012/03/12/coal-seam-gas-and-the-politics-of-the-future/> (accessed 10 January 2013)

⁴¹ Bahnisch, Mark (2012), *The Queensland Election, CSG and its ‘Social Licence’*, <http://blogs.crikey.com.au/the-wellhead/2012/02/27/the-queensland-election-csg-and-its-social-licence/> (accessed on 10 January 2013)

⁴² Gasfields Commission (2012), *Key Issues*, <http://www.gasfieldscommissionqld.org.au/key-issues/> (accessed on 10 January 2013)

Appendix 4: Policy Cycle



Althaus, C., Bridgman, P., and Davis, G. 2007. The Policy Cycle, in *The Australian Policy Handbook (4th edn)*, Crows Nest: Allen & Unwin, pp32-44.

Appendix 5: NSW SLRUP and 'Balance'

An example of this narrative framing can be seen in the recent 'NSW Strategic Land Use Policy' which was designed to strike a 'Balance' between competing land uses. This policy has been largely ineffective at developing social license for mining within the broader agricultural and urban community. This is because the point of 'Balance' is not the same for different publics that have different perceptions of value and the narrative in this context focusses on perceived value lost

rather than advantage gained. Thus, NSW Farmers and urban activists united in opposition to expanded mining activities:

"What we and thousands of city and country people wanted more than anything else from this government was our land and water to be protected."⁴³

In this particular 'Balance', the balance position for Miners and Unconventional Gas proponents was regulated access to resources, while for the agricultural sector and their urban support base it was quarantining of land and water resources for agricultural purposes. Miners and Unconventional Gas proponents stood to lose access to new areas of resource, while farmers stood to lose access to previously uncontested land and water resources. In this strategic narrative, land use is therefore framed around avoiding loss. Regulators may be given the role of reconciling social tensions in development⁴⁴; however, undue heartache and confusion may be avoided with a more proactive policy.

⁴³ NSW Farmers Association President Fiona Simpson in: Condon, M. (2012). *Farmers say NSW land use policy has caved in to mining lobby*. ABC Rural <http://www.abc.net.au/rural/news/content/201209/s3588725.htm>

⁴⁴ See Lipeitz (1987) as above