

Untapping opportunities in the Australian coal seam gas sector



Introduction



The growth of the Australian Coal Seam Gas (CSG) sector over the past few years has been nothing short of meteoric. Stimulated by the Queensland Government's Gas Scheme that has mandated targets for gas fired electricity generation since 2005 and the world's seemingly insatiable appetite for liquefied natural gas (LNG), the future for the Australian CSG sector appears assured.

Tens of billions of dollars of capital expenditure and thousands of new jobs are expected to be created in Queensland as a result. However, the road ahead is not without its challenges. Water management and its impact on underlying aquifers is an issue that continues to provoke much discussion and concern amongst the many parties affected by the growth of the industry.

Likewise, the practical challenges of developing and managing portfolios of thousands of wells, gathering systems, water treatment facilities and other associated infrastructure over the course of several decades should not be underestimated. Wells drilled across the huge geographies that are spanned by the coal seams can behave very differently often exhibiting broad variations in flow rates and production profiles.

As an environmentally friendly energy source in a world where peak oil is becoming a household term, natural gas reserves of the scale discovered in Australia can no longer be overlooked. This natural gas will play an important role in meeting Australian and global energy demand for many decades to come. The destination is clear but the path will undoubtedly twist and turn.

Australian CSG

A resource rediscovered

Overview

The history of CSG production can be traced back to the US, where production began in the early 1970s. Since then, notable producing countries have included Australia, Canada, China, and India, while another handful of countries have produced small volumes of CSG, with production usually tied to local/on-site or nearby power generation or industrial use projects.

Historical Australian CSG development was typically part of an integrated power generation effort and/or focused on local retail gas distribution. But more recently, the engine of growth for CSG has shifted to LNG exports where there are hopes and plans to link the country's well-known and readily accessible reserves and resources to the expected strong demand growth for natural gas in Asian markets.

The growing commercial utilisation of Australia's resources of CSG is centred on the resources located in the black coal deposits of Queensland and New South Wales. The presence of methane has been known ever since coal mining began in Australia, but separate commercial production of coal bed methane (CBM)/CSG is only a relatively recent step.

CSG exploration began in 1976 in Queensland's Bowen Basin, but it was not until 1996 that the first commercial CSG operation commenced with a methane drainage project at the Moura mine in Queensland. Today, two coal basins in Queensland host the vast majority of Australia's CSG production: the Bowen Basin and the Surat Basin. In neighboring New South Wales, there is also some production from Gunnedah and Sydney amongst others and CSG explorers have now turned their attention Australia-wide to a variety of basins including the Officer, Perth, Maryborough, Canning, and Otway to name but a few.

Figure 1: Major Australian CSG-LNG projects

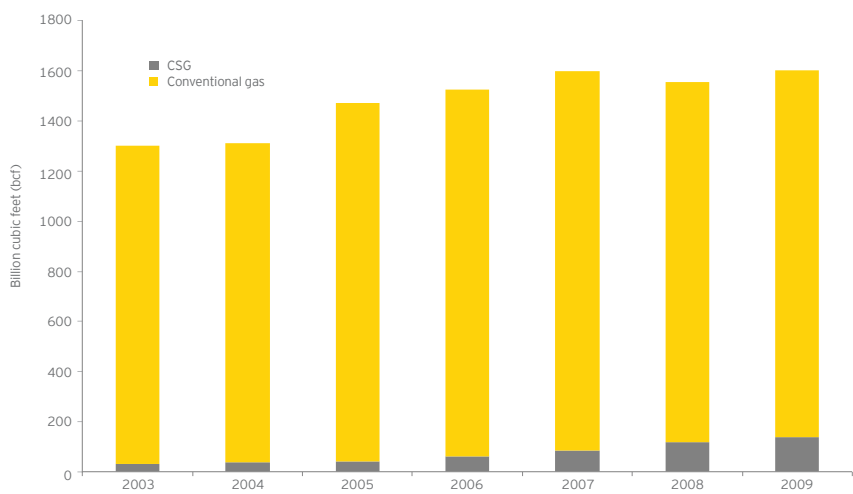
	Partners	Capacity	Status	Final Investment Decision	First LNG	Capital expenditure	Sales agreements
LNG companies							
Queensland Curtis LNG	BG Group – 93-94% CNOOC – 5% Tokyo Gas – 1-2%	8.5 mtpa (2 trains)	FID	2010	2014	~\$15-20	>100% CNOOC, Tokyo Gas, others
Gladstone LNG	Santos – 30% Petronas – 27.5% Total SA – 27.5% Kogas – 15%	7.8 mtpa (2 trains)	FID	2011	2015	~\$16	90% Petronas, Kogas
Australian Pacific LNG	Conocco Phillips – 42.5% Origin Energy – 42.5% Sinopec – 15%	9.0 mtpa (2 trains)	FEED	2011	2015	~\$19-20	50% Sinopec
Arrow Energy LNG	Shell – 50% PetroChina – 50%	8.0 mtpa (2 trains)	FEED	CY2012	>2016	~\$15	100% Shell, PetroChina

*estimated capex in US\$ billion - possible expansions are excluded

Production of CSG has increased significantly over the past seven years with its share of total Australian gas production increasing from 2% in 2002 to about 9% in 2009 (2010 figures are not yet available). CSG production reached almost 140 billion cubic feet (BCF) in 2009, with more than 96% of that total from Queensland. Notably, CSG accounts for about 80% of the Queensland domestic natural gas market.

The Australian Government's Department of Energy, Resources and Tourism, recently assessed CSG life at the current rates of production, forecasting the proportion of economic demonstrated reserves (EDR) to current production at 100 years for CSG, compared to 63 years for conventional gas¹.

Figure 2: Australian natural gas production



Source: Australian Department of Energy, Resources and Tourism, Energy in Australia in 2010, April 2010

1. Australian Department of Energy, Resources and Tourism, Energy in Australia 2010, April 2010.

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Richard Howse, Ernst & Young's Brisbane Oil & Gas Leader

Key projects and recent developments

There are currently several proposed CSG to LNG projects with a potential combined capacity of up to 40 million tonnes of LNG (almost 2 trillion cubic feet). The four major projects are summarised in Figure 1.

As the table shows, all projects are demonstrating considerable success in terms of securing LNG offtake. The sellers are thought to have been successful in maintaining Japanese Customs-cleared Crude (JCC) pricing for long-term contracts, thereby securing oil price indexed revenue.

The economics of developing a two train project continue to look challenging in the face of cost escalation in the industry. Adding a third and fourth train are increasingly likely outcomes in order to benefit from economies of scale and thereby improve project economics. However, at present, further consolidation amongst the joint ventures is considered unlikely.

Growth in demand for LNG is expected to continue to be driven by China. Natural gas currently represents a very small percentage of China's vast demand for energy. As such, a small upward revision in the energy mix towards gas can materially impact global LNG demand. As a result, any changes to China's energy policy following on from the tragic events in Japan should be carefully monitored.

Finally, the social licence to operate, including water management and land access issues, continues to dominate. Projects are regularly faced with protests and much media coverage of the industry continues to focus on the longer-term implications of the unprecedented scale of water extraction and the impact this could have on local communities' water supplies. Regulation continues to rapidly evolve in this area.

The new fiscal framework

On 2 July 2010, the Federal Government announced its plans to expand the existing Petroleum Resource Rent Tax (PRRT) to cover onshore oil and gas projects and the North West Shelf. On 24 March 2011, The Federal Government endorsed the full package of recommendations put forward in December 2010 by the resource taxation Policy Translation Group (PTG). As expected, the Government has signalled its intention to release draft legislation for consultation in the first half of this year.

Including income tax, the nominal tax rate for onshore oil and gas projects will increase from 30% to 58% although the economic impact for existing projects is expected to be lower given creditability of state royalty and the deductibility of the starting base.

Richard Howse, Ernst & Young's Brisbane Oil & Gas Leader states, "The Government's acceptance of the PTG's recommendations should give companies enough certainty to start planning for the implementation of the expanded PRRT. Decisions made today can impact the PRRT position of affected taxpayers post the 1 July 2012 start date. Ernst & Young has developed a comprehensive implementation checklist to assist companies transitioning into the new regime."

Whilst legislation is yet to be finalised, the key elements of the regime are currently expected to be implemented as follows:

- ▶ Start date of 1 July 2012
- ▶ Headline tax rate of 40% (income tax deductible)
- ▶ No de-minimis threshold
- ▶ An immediately deductible starting base to shelter pre-committed projects
- ▶ A credit for state royalty and federal excise
- ▶ Consolidation for projects with common upstream or downstream infrastructure
- ▶ Augmentation and carry-forward of surplus starting base and royalty

Companies transitioning into PRRT should start to consider the implications today. Critical issues include:

- ▶ Scheduling of expenditure: outcomes may be different for expenditure incurred pre and post start-up
- ▶ Commercial agreements: economics, timing, structure and contractual terms could all be impacted
- ▶ Starting base selection and measurement: this could materially impact project economics
- ▶ PRRT compliance and reporting: significant changes to systems and processes are likely
- ▶ Legal review of contracts: Joint Operating Agreement (JOA), Gas Supply Agreements (GSAs) may require amendment

Addressing the issues and potential pitfalls

The world scale development of unconventional resources including CSG in Australia is a young and pioneering industry. While a lot of progress and learnings have been made in a short period of time, there are still significant challenges ahead for the many stakeholders involved:

Access to reserves

Unconventional resources (such as CSG) are fast becoming an important part of oil and gas companies' reserve portfolios. As new technologies make these resources more accessible and cost effective, mankind's growing need for energy has ensured their future as an important part of the supply mix. Particularly in a region such as Asia, where long-term demand growth is expected to be strong, the reserve potential of CSG is presenting tremendous opportunities.

For the CSG majors, material progress is being made to prove up sufficient reserves to underpin the respective LNG projects. Unlike conventional oil and gas projects, wells are continuously drilled over the life of the projects and therefore reserve additions are only required to be brought on as required over the project life. Whereas the completion of each well is typically less complex than its offshore counterpart, the predominant challenge is to manage a large portfolio of wells over the extended project life in a way that sustains supply. We have recently seen the way sustainability can be disrupted by external events such as floods or land access issues. From the development of business continuity plans to the delivery of robust performance management frameworks, Ernst & Young is helping to keep projects on track.

The CSG juniors are actively proving up CSG reserves in their own right. Whilst, historically, share prices have responded well to increased reserves announcements, we have seen investors become increasingly focussed on companies that pursue a rigorous commercialisation plan. Juniors should consider economic modelling as a key enabler when seeking to raise capital, as well as considering strategic partnerships and innovative structures to underpin commercialisation plans.

Cost overruns and risk management

Globally, oil and gas companies are again seeing significant increases in drilling, service, production and operating costs. The increasing levels of upstream capital expenditure that are being seen across the industry are a further incentive for leading organisations to optimise their costs and working capital. Companies have to manage cost-cutting concerns as well as the pressure for rapidly maturing opportunities in an environment that demands huge investments and flexibility to overcome technological and operational challenges.



“The size of these CSG mega-projects and the need for off-take have given rise to multi-party joint venture arrangements; this has, in part, helped to endorse the sector in the eyes of Asian investors and allowed small to medium sized coal seam gas companies to tap a new pool of strategic investors.”

Roger Dartnell, Ernst & Young's Oceania Transactions Leader – Oil & Gas

In the Australian CSG sector, cost control is a critical success factor and is closely tied to operational performance. Competitive tender processes can be used to drive down costs but not at risk of health, safety or project delivery. Contracts and procurement processes must evolve to consider a range of quantitative and qualitative criteria against every award. Building smarter tender processes around a centralised contracts and procurement function can deliver large savings. Ernst & Young's programme advisory services and supply chain management teams are focused on individual processes such as procure-to-pay cycles to identify inefficiencies and deliver standardised, streamlined systems that deliver these savings.

Managing capital projects

The large number of mega projects around the world currently in the process of being implemented or awaiting Final Investment Decision (FID) has cast a spotlight on the need for world class project management. The capital budgets of these projects have become so large and the business processes so complex, that the difference between average project management and leading project management process can be tens of millions of dollars. By adopting best practice management and governance principles, companies can mitigate “cost bubbles” and operational inefficiencies that would threaten project delivery.

Ernst & Young's Oceania Oil & Gas leader, Jeff Dowling believes many of the challenges now being experienced by the CSG sector in Australia are no different from those experienced by the conventional oil and gas mega-projects. He states, “Through an intense focus on business management systems and capital allocation, Ernst & Young has helped major joint ventures effectively deliver safely, on time and on budget. This focus is critical given the ground breaking nature of the CSG to LNG sector.”

Regulatory assessment and compliance

Oil and gas joint ventures are facing unprecedented levels of regulation. From the roll-out of global regulatory compliance such as, the UK Bribery Act, to sector specific environmental regulations, companies' finance, legal and compliance functions are being put under significant pressure.

Boards are increasingly approaching Ernst & Young's risk advisory practice for advice on developing a comprehensive corporate governance framework. Specific areas of interest include: climate change management, fraud and reporting uncertain tax positions.

Portfolio management

For several years, the Australian CSG industry has seen higher transaction levels as major joint ventures have been formed and both International and National Oil Companies have rushed to ensure that they are positioned to participate in the sector. Globally, recent record levels of upstream capital investment are also driving portfolio rationalisation across the industry and the large number of mega-projects in the upstream has created a record number of major new joint ventures.

Ernst & Young's Oceania Transactions Leader – Oil & Gas, Roger Dartnell states; “The size of these CSG mega-projects and the need for off-take have given rise to multi-party joint venture arrangements; this has, in part, helped to endorse the sector in the eyes of Asian investors and allowed small to medium sized CSG companies to tap a new pool of strategic investors. The sector remains on course for strong growth.”

Ernst & Young's experienced, accessible and globally connected transaction advisory support team can be a key differentiator when a company approaches the capital markets. Providing services that span financial due diligence, valuation support, independent experts' reports and capital raisings, our teams are well positioned to support the industry as it grows.

Innovation

The need for innovation is a key issue for the CSG sector. Some of the areas where innovation is currently being applied include:

- ▶ Wider placement of wells through use of horizontal drilling techniques
- ▶ Development of less intrusive wells through siting equipment underground
- ▶ Improving efficiency of desalination plants
- ▶ Developing new techniques for laying gas gathering systems quickly and with minimal footprint

Through recruitment of geologists, engineers and technical specialists, Ernst & Young's research and development (R&D) team is able to work with clients to co-develop strategic R&D programmes that provide access to government incentives and develop a granular understanding of fixed asset investments.

Access to skilled labour

Skills shortages are already starting to emerge in the CSG industry. Energy Skills Queensland forecasts that several thousand new jobs will be required in the next few years as the sector continues to grow towards its first LNG export. Many of the skills needed are either in short supply or are simply not available in the domestic market place. Therefore the industry is looking overseas to fill many of the gaps.

Critical to the successful implementation of this strategy is to holistically plan immigration, remuneration and retention packages that attract and retain the right skills. Ernst & Young's Human Capital team links together its personal tax and immigration service lines to provide all-round solutions to the industry that meet the needs for skilled staff at an appropriate cost and with a focus on their retention.

Conclusion

Australia represents one of the most exciting, dynamic and challenging environments in the world today for coal seam gas companies. While much has been achieved to-date, there remain many challenges ahead. Forward planning for these challenges is key to success for the many companies operating in this pioneering industry.

Learn more

For more information about our service lines and our oil and gas focused service offerings, please consult the contact list below or your local Ernst & Young advisor.

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