



ENERGYQUEST



Australian Coal Seam Gas 2008 CSG Meets LNG

September 2008 Update



E N E R G Y Q U E S T

Australian Coal Seam Gas 2008

East coast Australian gas is joining the international gas market, with investments in coal seam gas for LNG by BG Group, Petronas and Shell.

At the same time domestic gas demand is likely to increase with an Australian Emissions Trading Scheme.

This all relies on a massive expansion of coal seam gas.

Is this achievable?

Is this a viable alternative for international gas buyers and producers and what are the domestic implications?

Australian Coal Seam Gas 2008: CSG Meets LNG is an up-to-date, independent and comprehensive 142 page report on the current state of play and outlook for Australian CSG.

It takes an international perspective, integrating current Australian CSG developments with the current dynamics driving global LNG.

Issues the report addresses include:

- What are the conditions for commercially viable CSG?
- What are the reasons for recent Australian success?
- How are reserves assessed?
- What is the status of current projects?
- What is the current level of reserves and what is the future potential?
- Who are the current and emerging CSG players?
- What is the production outlook?
- What are the economics of domestic CSG?
- Why are international players interested in CSG?
- What are the strategies being pursued by major LNG players and how does CSG fit?
- Is there likely to be further international interest?
- What is the current status of the LNG proposals? How many can happen?
- What are the challenges for LNG from CSG?
- How competitive is LNG from CSG compared with conventional LNG projects?
- Are there enough east coast gas reserves for both LNG and domestic gas demand?

Level 10 60 Waymouth St Adelaide SA 5000

Telephone (08) 8431 7903 Mobile 0419 828 617 Email gbethune@energyquest.com.au

ABN 51 110 284 270

www.energyquest.com.au



E N E R G Y Q U E S T

- What is the outlook for domestic gas demand with emissions trading?
- What is the outlook for east coast gas prices?
- What are the implications for domestic gas buyers?
- What are the risks?

The report draws on EnergyQuest's data base of Australian CSG companies, production and reserves; intensive company research and wide-ranging discussions with major oil and gas companies, CSG producers, service companies, government agencies and LNG buyers, producers and contractors. The research includes discussions with major LNG buyers in Asia, major competitors to Australian LNG in the Middle East and participation at the recent 19th World Petroleum Congress in Madrid, a meeting place for the world's major producing countries and companies.

For **existing CSG producers** the report provides an independent source of commentary, data and analysis.

For **domestic gas buyers** the report analyses the implications of the LNG projects, recent corporate activity and likely implications for domestic gas prices and supplies.

For conventional **LNG producers** it provides a comprehensive introduction to CSG, the projects being developed and the opportunities.

For **LNG buyers** it explains the potential role of CSG as a new source of LNG and the opportunities.

For **governments** it raises the significant policy issues which the globalization of east coast gas creates.

For **infrastructure providers** it highlights the impact of CSG growth for pipelines and processing facilities.

For **service companies** it provides a guide to the opportunities the sector provides.

For **investors and bankers** it provides an independent and comprehensive review of the opportunities and risks in the sector.

Please let me know if you would like to subscribe to the report or if you would like further information.

Yours sincerely,

Graeme Bethune
Chief Executive Officer
EnergyQuest
Energy data, analysis and strategy.

15 September 2008

Tel: +61 8 8431 7903
Fax: +61 8 8431 6620
Mobile: +61 419 828 617
Email: gbethune@energyquest.com.au
www.energyquest.com.au
ABN: 51110284270



E N E R G Y Q U E S T

EnergyQuest

About EnergyQuest

EnergyQuest is an energy consulting company established by Dr Graeme Bethune in 2005 to provide strategic analysis on Australian oil, gas and other energy sources.

EnergyQuest is increasingly recognised as an authoritative source of data and analysis on Australian energy and its reports on energy trends are regularly quoted by the major international wire services such as Bloomberg, Platts and Dow Jones, as well as by the Australian media.

EnergyQuest's clients include major Australian companies, most Australian governments, institutional investors and a number of international companies.

EnergyQuest is a member of the Australian Petroleum Production and Exploration Association, the Australian upstream oil industry association.

EnergyQuarterly

EnergyQuest produces the EnergyQuarterly, which provides comprehensive and timely statistical analysis of oil and gas production, reserves, development projects, gas contracts and prices in Australia.

There are over 50 clients for the EnergyQuarterly service including major oil and gas producers, gas buyers, infrastructure providers, service companies and government agencies.

Australian Energy Sector

EnergyQuest has undertaken a number of sector-wide assignments on Australian energy:

- An assessment of the costs and benefits of removing the 15% shareholder cap on Santos Ltd for the South Australian Government.
- Advice for the SA Electricity Supply Industry Planning Council (ESIPC) on future east coast energy supply options (coal, gas and liquid fuels).
- The Australian Energy Regulator has made extensive use of EnergyQuest material in their State of the Energy Market 2007 Report.
- EnergyQuest has undertaken a comprehensive review of Australian oil and gas production and development for a major oil and gas producer.

Natural Gas

EnergyQuest has undertaken many assignments on demand and supply for Australian gas.

In 2005 it undertook a pioneering multi-client study of coal seam methane (for clients including Origin Energy; AGL; BHPBilliton; Rio Tinto; Queensland Gas; Santos and Oil Search) and has subsequently followed developments and undertaken assignments on the burgeoning Australian coal seam gas sector.

Some of the assignments undertaken by EnergyQuest on Australian gas matters include:

- Independent report on gas reserves for a proposed pipeline acquisition.



E N E R G Y Q U E S T

- Independent report on gas deliverability for a major gas user.
- Advice for a NSW power generator on gas options.
- Advice on gas supply options for the Mt Isa minerals province.
- Gas price forecasts by region for the National Generators Forum.
- Advice for an infrastructure provider on east coast gas storage options.
- Advice for the WA Economic Regulation Authority on gas price trends.
- Advice for a major oil and gas company on potential Australian LNG projects.
- Retained for an east coast gas price arbitration in 2008.
- Projections of future east coast gas prices for an electricity planning agency.
- Projections of future Australian coal seam methane production.
- Review of Australian coal seam methane sector.

Graeme Bethune is also a senior member of the Gerson Lehrman international expert network (ranking in the top 20% of members globally).

EnergyQuest Team

- Dr Graeme Bethune, CEO, with 30 years experience in economic and financial analysis, 10 years in senior executive roles with Santos and three years in Australian oil and gas analysis and strategy as EnergyQuest.
- Graeme Atwell, Senior Associate, with 40 years experience in the gas and power industries.
- Susan Bethune, Executive Manager, with 30 years experience in economic, financial and statistical analysis.

Dr Graeme Bethune Chief Executive

Graeme Bethune established EnergyQuest, an energy consulting company, in 2005 to provide strategic analysis on Australian oil, gas and other energy sources.

Prior to establishing EnergyQuest Between Graeme Bethune held senior positions with the Australian energy group, Santos, reporting at various times to the CEO and CFO, responsible for finance, business development, investor relations and media. This included over \$2 billion of major financing and asset acquisitions and divestments.

Before joining Santos in 1995, he held a number of senior South Australian Government positions between 1977 and 1995, including head of SAFA, the SA Government Financing Authority (a \$20 billion government financing authority, responsible for major domestic and international funding and interest rate management), Assistant Under-Treasurer in the South Australian Treasury and various senior positions with other government agencies.



E N E R G Y Q U E S T

Dr Bethune's qualifications comprise:

- First-class honours degree in economics from Monash University.
- PhD in Urban Research from the Australian National University.
- Executive program at the Graduate School of Business, Stanford University.
- Fellow of the Australian Society of Certified Practising Accountants.
- Fellow of the Australian Institute of Company Directors.
- Member of the Society of Petroleum Engineers.
- Member of the Petroleum Exploration Society of Australia.
- Chair of the Australian Institute of Energy (SA).

Graeme Atwell Senior Associate

Graeme Atwell joined EnergyQuest in 2007 as a Senior Associate.

Graeme has had in excess of 40 years of experience in the energy industry in Australia in a wide range of roles and responsibilities covering the total energy supply chain.

For over 30 years, Graeme operated in a diverse range of roles in the electricity generation industry in South Australia within the Electricity Trust of South Australia (ETSA). This included power station design, operation and maintenance, coal mining at the Leigh Creek Coal field for 8 years, and purchasing and trading of gas for electricity generation. For several years Graeme represented ETSA on the national generation committee of the Electricity Supply Association of Australia.

On behalf of ETSA, in 1994 and 1995, Graeme was responsible for negotiations for, and establishment of, gas purchase contracts from the Cooper Basin and gas transportation contracts in the Moomba to Adelaide pipeline (MAP) as a result of the South Australian Government's decision to discontinue its gas marketing role (previously conducted by PASA) and to sell the MAP assets.

During the late 1990's, Graeme played a key role in establishing the gas trading entity, Terra Gas Trader, and negotiating gas supply contracts with the various electricity generation businesses established by the SA Government due to the separation and privatisation of the ETSA assets. During this time Graeme was also a member of the Major Energy Users Group national committee.

Between 2001 and 2007, Graeme was employed by Santos in key commercial roles. This included marketing and commercialisation of gas from the Cooper Basin assets on behalf of the South Australian and South West Queensland Producer Joint Ventures. Major projects in this role were the sale of in excess of 500PJ of gas (over \$2 billion) to AGL in 2002, major ethane sales to Qenos in Sydney, and negotiation and establishment of Australia's first major gas swap agreement which enabled Queensland CSM to be contractually supplied to Sydney markets.

Within Santos, Graeme was also responsible for commercialisation of Santos' Timor Sea assets and played a key role in the project to bring PNG gas to Australia.

In support of Graeme's commercial and contractual responsibilities he also completed a Professional Certificate in Arbitration and Mediation.

Graeme is a member of the Institution of Engineers Australia, Australian Institute of Energy, and the Institute of Arbitrators and Mediators.



E N E R G Y Q U E S T

Susan Bethune Executive Manager

Susan Bethune is responsible for the EnergyQuarterly, data bases and statistical analysis. Susan has 30 years experience in economic and financial analysis with the Commonwealth government, the finance sector and the tertiary education sector. She has an honours degree in economics from Macquarie University and a Masters degree in economics from the Australian National University.

Level 10 60 Waymouth St Adelaide SA 5000

Telephone (08) 8431 7903 **Mobile** 0419 828 617 **Email** gbethune@energyquest.com.au

ABN 51 110 284 270

www.energyquest.com.au