



# The QGC Story



**“Queensland Gas is one of this state’s great success stories.”**

**Queensland Premier Anna Bligh at Australian Onshore LNG launch, QGC House, 3 February 2008**



Berwyndale South #18  
initially free-flowed gas at  
2.3 million cubic feet per  
day and stabilised at around  
2 million cubic feet per day.



# The QGC Story

When Australian mining legend Bob Bryan founded the Queensland Gas Company in 1999, he had big dreams for his energy fledgling.

The Brisbane-based geologist, gold miner and property developer had been invited by State parliamentarians to investigate the potential of a little-known resource called coal seam gas as part of a review of energy policy.

Coal seam gas is natural methane which has molecularly bonded with underground coal deposits. Extracting the gas from the solid coals produces a valuable energy source. It is cheaper than oil, cleaner than coal and more reliable and cost-effective than current renewables such as solar, wind and hydro-power. Gas-fired power stations produce just half the amount of greenhouse pollutants as their coal-fired predecessors.

“It sounded fascinating,” Mr Bryan said. “I thought to myself, ‘There has to be an opportunity here’.”

With long-time colleagues Bob Bell and Dick Groves, and founding General Manager Norm Zillman, Mr Bryan raised almost \$600,000 to launch the new junior gas explorer they decided to call the Queensland Gas Company (QGC).

Mr Bryan took two shares, each of the others took one share and the project was underwritten by Wilson HTM and D&D Tolhurst. It floated on the Australian Stock Exchange in August 2000, raising about \$12 million.

**Opposite page:** Berwyndale South Gasfield hosts the central gas processing facility for all of QGC's operations in the Surat Basin.

Today, QGC is recognised as one of Australia's top integrated energy companies with a significant global market, strong guaranteed revenues and international backing.

Managing Director Richard Cottee and his executive team have steered the company through years of solid geological and technical work, nimble and intelligent management and three costly takeover attempts to achieve a market capitalisation that topped \$3.5 billion in February 2008.

It is a huge leap in just eight years. When QGC listed, coal seam gas was still a little-understood resource by the Australian public and mainstream energy producers.

Australia's early coal seam gas exploration, in the 1970s, concentrated on the Bowen Basin in Central Queensland. But drilling techniques based on the United States experience proved unsuitable and frustrating in the compressed seams of that area.

It took decades to develop suitable techniques and nurture a commercial appreciation for the potential of the gas, and it was 1996 by the time Queensland marked the first commercial production of coal seam gas.

The founders of QGC decided to site their tenements on 7,500 square kilometres of resource-rich country roughly centred on Condamine, Miles and Chinchilla, in the Surat Basin. It is an area known as the Walloon Coal Measures.

"This extensive coal system has long been described and mapped by coal miners and conventional petroleum exporters," Mr Bryan said. "However, from the perspective of coal seam gas, the Surat Basin was a frontier area."

While the coal seams act as a sponge for the gas – also known as coal bed methane – the seams must be sufficiently permeable to allow extraction of the underground water, releasing the gas. QGC's tenements proved to be highly permeable.



QGC Chairman Robert Bryan

---

The Walloons are terrain Mr Bryan knows like the back of his hand. For decades he traversed the Surat Basin, exploring and drilling for minerals such as gold, coal and sedimentary uranium, at a time when gas from the coals – far from being a valued commodity – was regarded as a hindrance.

“I had spent so much time in the same area looking for different things for different companies,” Mr Bryan said. “It was always a bit of a problem going through the Walloon coals to the coal strata because we kept hitting this bloody gas. We soon learned to bung it up with mud.

“In one of the holes we’d finished, we couldn’t stop the gas. We had to shut the hole off and we needed something to put down it, without it all blowing out of the top. So we tipped an old refrigerator into the hole, then got a load of ready-mix concrete and poured it on top of the refrigerator. We made the mistake of leaving our steel peg and number beside it.”

Twenty years later, a QGC exploration team would come across that peg – and its curious cairn of concrete and rusted metal. The remarkable coincidence provides a wry reminder to Mr Bryan of the years he spent ‘bunging up’ the very resource his company now pursues.

**“QGC has every reason to feel confident.”**

**Bryan Frith, The Australian, October 2006**

## GAS to LNG

**Q**GC, its partners and shareholders are poised to reap lucrative benefits for decades to come through the newly-struck Australian Onshore LNG Alliance with global energy major BG Group (formerly British Gas).

BG Group is acquiring significant interests in both QGC and its Walloons acreage as part of an \$8 billion agreement (codenamed Project Honey during confidential negotiations) to export LNG around the world, using QGC's Surat Basin gas as feedstock.

The two companies are each contributing \$4 billion to ramp up exploration and production of gas at QGC's tenements, construct a 380-kilometre pipeline to pump it to Gladstone, build an LNG plant and install port facilities to accommodate BG's LNG tankers.

"This project puts Queensland's gas on the world stage and transforms QGC from an explorer and producer to a fully integrated energy company with outstanding growth potential," Mr Cottee said.

"This transaction is by far the most significant milestone in QGC's history, and it will make us the clear leader in Australia's coal seam gas sector. It provides us with excellent potential for more growth in Australia and internationally.

"The global demand for LNG is forecast to more than double from 150 million tonnes per annum (mtpa) in 2006 to 400 mtpa by 2015 and it is very exciting to be a significant player in this high-growth sector."

Queensland Premier Anna Bligh joined Mr Cottee, Mr Bryan and BG Managing Director, Business Development, David Maxwell, in launching the project at QGC House in Brisbane on February 3 2008.

"This deal is good news for Queensland," Ms Bligh said. "On behalf of our Government I look forward to working with (QGC) to facilitate these projects as they come to fruition. This is an opportunity that has been grabbed by this great local company and it's one that will benefit all parts of Queensland."

Richard Cottee's Growth Acceleration Strategy (GAS) had propelled the company toward Longterm Natural Growth (LNG).

The project is expected to generate 5,000 jobs for regional Queensland and bring a multi-billion-dollar windfall to the State Government.



**Main picture:** QGC Managing Director Richard Cottee and Chairman Robert Bryan were joined by Queensland Premier Anna Bligh to announce QGC's alliance with BG Group represented by Managing Director Business Development David Maxwell.  
**Above:** BG Group operates a global LNG business and has liquefaction plants in Trinidad and Egypt (pictured).

In 2002 the Queensland Government announced a new energy policy requiring 13 per cent of Queensland's electricity to be generated from natural gas by 2005. The bar has since been raised to 18 per cent. The announcement acted like a starter's gun for new exploration companies, and Mr Bryan's foresight paid off. QGC was already off and running, having drilled test wells and core holes in 13 of its Areas of Interest. "We are increasingly confident we are working with a huge gas reserve," Mr Bryan said at the time.

In October of the same year, the company recruited Richard Cottee, a dynamic visionary and 'reformed lawyer' with more than 20 years' experience in resources and energy. When he arrived, the company was in a precarious position, grappling with methods of drawing the gas from its unusual coals.

"Our share price hovered around 25 cents, we were in litigation with former partner Pangaea, courting BHP Billiton (BHP) and still struggling to understand and adapt to the unconventional behaviour of our bountiful, highly-permeable coal seams," Mr Cottee said.

The first phase of his long-term plan was survival: get the gas out of the ground and find buyers for it. Experts borrowed from BHP helped the team devise a well completion

**“Queensland Gas Company’s Richard Cottee has pulled off his second ‘deal of a lifetime’...”**

**Stephen Bartholomeusz, Business Spectator, February 2008, commenting on the alliance with BG Group**



QGC Managing Director Richard Cottee

---

## “The best decision I’ve ever made in my life was to hire Richard Cottee.”

**QGC Chairman Robert Bryan**

technique that is now envied in the industry. In June 2003, the company signed a ‘bedrock’ contract with CS Energy, bringing funding to develop its fields and certify the reserves to supply gas for the Swanbank power station.

Under Mr Cottee’s guidance, QGC worked on gaining a petroleum lease and pipeline licence, and on drilling and increasing gas delivery rates for its Berwyndale South field, which showed glimpses of tantalisingly high yields. Just 14 kilometres from the Roma-to-Brisbane pipeline, the field promised “astounding” gas flows, Mr Cottee said at the time.

In 2004, with Berwyndale South registering gas flow of more than 1.2 million cubic feet a day (mcf) and similar encouraging results at the company’s nearby Argyle field, QGC became the first company to independently certify coal seam gas reserves (559PJ – proven and probable) in the Surat Basin.

“The best decision I’ve ever made in my life was to hire Richard Cottee,” Mr Bryan said. “When he came on board, our share price was 22-23 cents.” In February 2008 it reached \$4.67.

Gas production increased 17-fold to 191 mcf. The company signed another contract with fertiliser manufacturer Incitec Pivot and field staff turned their attention to developing the Argyle field.



**Top left:** Welding at the main compression plant at Berwyndale South. **Top right:** Gas and water gathering pipelines are buried underground, leaving little evidence of the gas production process. **Main picture:** View to top of Ensign rig #34.

Today, based on currently committed demands, the company's world-class reserves in the Surat Basin are projected to be supplying 20 per cent of the Queensland domestic gas market in 2009.

With survival assured, QGC began looking to maximise its potential in other areas of the energy sector. It was time for the explorer to become a producer.

With construction and engineering giants Thiess and Siemens, it began a feasibility study into building, owning and running its own base load gas-fired power station at Condamine, using gas from its nearby tenements.

In May 2006, with Berwyndale South Gasfield brought in on budget and two months early, QGC began supplying 4 PJ a year to the Swanbank Power Station. A month later, it started supplying a further 4 PJ a year to the Braemar Power Station at Wambo, west of Dalby.

"QGC is in fact delivering twice the original contracted quantity of gas – for only a small additional capital outlay. This highlights the attractiveness of 'bolt-on operations'," Mr Bryan said.

**"Gas has to be one of the transition fuels that helps the world between now and when we have the technology to make our current major fuel sources cleaner than they are."**

Queensland Premier Anna Bligh at Australian Onshore LNG launch, QGC House, 3 February 2008

Local landowners and traditional Aboriginal owners are also highly valued. The Barunggam, Western Wakka Wakka and Bigambul peoples have all signed agreements with QGC on various aspects of culturally-significant areas and work alongside the company to preserve cultural heritage.

QGC has begun a tradition of thanking its partners and friends with a 'Drama at the Gasfields' day at its Windibri Homestead, near Chinchilla. In 2006 and 2008 Brisbane's La Boite Theatre Company have performed musical comedy shows for the crowds of local people and visitors who attend the family day.

The inaugural Drama at the Gasfields won an Australian Business Arts Foundation award in 2007.

Now with a large workforce in the Surat Basin, the company has an excellent relationship with local farmers – many of whom are also shareholders. An audit of QGC's shareholders in 2007 found more than a third had southern Queensland postcodes. There is extensive consultation and compensation with local landowners as QGC tries to site dams, wells and roads to mutual benefit.

The Condamine Power Station project, now well underway, is part of a strong trend away from coal-fired power stations and toward cleaner, gas-fired electricity. It is on-track to start selling electricity in February 2009.

"Efficiency is a consistent driver for QGC and it underpins the company's desire to enter the National Electricity Market," Mr Bryan said. "Generating electricity from gas is much more efficient than conventional coal-fired operators, quite apart from the significant environmental benefits.

"Generating electricity from coal seam gas is even more efficient because it is not dependent on external water supplies – at a time when many Australian power generators are constrained by the worst drought in living memory."



## The Inland Sea

**Q**GC is working hard on ways to deliver a priceless resource to southern Queensland: water.

Over millions of years, gas was not the only substance absorbed into the underground coals of the Surat Basin. Billions of litres of water are also locked up in the coals. Part of the gas-extraction process, de-watering, delivers vast quantities of water to the surface.

QGC has been running trial reverse osmosis plants and is experimenting with agricultural uses for the water. In January 2008, it signed a 20-year agreement with the Murilla Shire Council to provide the town of Miles with more than half a billion litres of drinking water a year.

**Below:** A 100 hectare dam at Berwyndale South Gasfield stores water harvested from the gas extraction process and hosts a wide array of birdlife.



Under the GAS initiative, work was powering along on all fronts, with exploration techniques moving forward and pivotal appointments made in this area.

US-born Mike Herrington, with more than 25 years in international oil and gas exploration, became Chief Operating Officer. Steve Scott, with more than 30 years geoscience experience in the Queensland resource industry, had been with QGC since its inception, overseeing on-site exploration and appraisal. He became General Manager (Exploration and Technical Services). In 2005 QGC acquired Leon Devaney as General Manager, Commercial and Financing. He left Deloitte Corporate Finance for QGC because of “my belief in the fundamentals of QGC’s core assets and the dynamic style of the management team.”

In March 2007 QGC formed a strategic alliance with AGL Energy, providing both a major market for its gas and buffering the company from corporate disruptions in the short term. After short-circuiting takeover attempts from Santos, AGL, and US-based private equity group TWC, QGC is free to concentrate again on growth. The Australian Competition and Consumer Commission described QGC in early 2007 as an “efficient and vigorous competitor” in the Queensland gas market.

**“QGC is positioned like no other to benefit from Australia’s growing energy demand. The quality of our resource ranks among the best in the world in terms of its efficiency and productivity. It’s a big company and it’s going to get bigger.”**

**QGC Managing Director Richard Cottee**

**“We were getting miles more gas than we could reasonably assume that we could sell into the domestic market. We needed an additional market, and LNG had to be a candidate for that.”**

**QGC Chairman Robert Bryan**

In 2007 and 2008 QGC was growing so strongly it needed to expand its management team. It attracted Chief Financial Officer Ian Davies, a former Barclays Capital investment banker in London with financial, tax, commercial and risk management experience, General Manager LNG Carsten Thomsen, who has global experience in upstream and downstream oil and gas, power generation, distribution and chemicals and General Manager Communications and External Relations Hedley Thomas, an acclaimed journalist and five-times Walkley Award winner.

In June 2007, QGC announced a \$260 million expansion programme to drill more than 100 new wells, double gas sales to 30 PJ in 2008 and double again to 60 PJ in 2009. Berwyndale South now processes more coal seam gas than any other area in Australia.

The massive scale of the \$8 billion new Australian Onshore LNG Alliance with the BG Group – announced in February 2008 – will add at least 190 PJ a year to sales from 2013, at export prices of roughly double the domestic rate. It was a stage Mr Cottee dubbed Long-term Natural Growth (LNG). GAS had become LNG.



**Main picture and above left:** BG Group's LNG facility in Egypt will provide the basis of designs for the Australian Onshore LNG project. **Above right:** Brian Rixon is training to be a Drilling Engineer for QGC.

Mr Bryan said the agreement fitted perfectly with QGC's energy sector expansion. "We were getting miles more gas than we could reasonably assume that we could sell into the domestic market," he said. "We needed an additional market, and LNG had to be a candidate for that."

Delighted shareholders have stood by QGC through the takeover attempts, following the advice of the board and management to sit tight. "There are not many companies that defeat a takeover bid and, six months later, the share price is twice that of the highest takeover offer," Mr Cottee told a packed AGM in November 2007.

From a junior explorer in a budding field, QGC has acted decisively to make coal seam gas its own. Astute buyers have watched their shares climb from 20 cents to \$4.67 in less than eight years, as QGC charged through the ASX top 150 companies to peak at number 77 by market capitalisation.

Its future is looking as stellar as its record. Mr Cottee predicts rapidly escalating growth and expansion.

"QGC is positioned like no other to benefit from Australia's growing energy demand," he said. "The quality of our resource ranks among the best in the world in terms of its efficiency and productivity. It's a big company and it's going to get bigger."

"In July 2007, Epic and AGL unveiled plans to construct a pipeline between Queensland and New South Wales, effectively establishing a national gas market. By the time that link is completed in December 2008, QGC will be in a perfect position to capitalise on the opportunity of participating in that market."

Domestic electricity prices are rising, and Queensland's annual 200 PJ demand is expected to grow by 100-150 PJs over the next five to eight years. With the building of the cross-border pipeline, the New South Wales market will also lie open to QGC.

# Coal Seam Gas

## What is CSG?

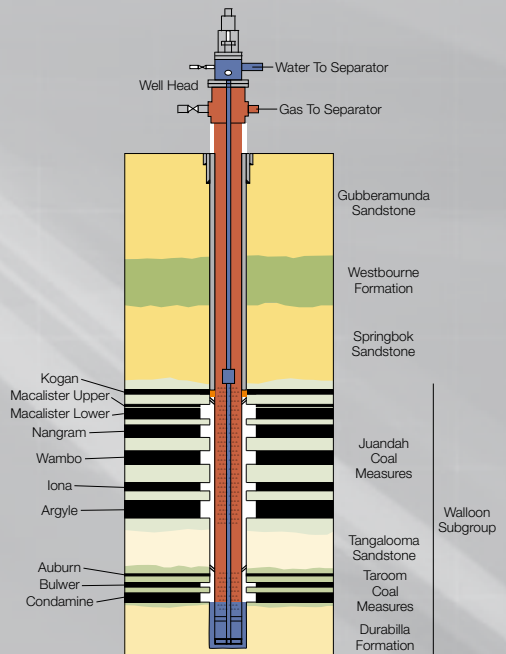
Coal seam gas occurs naturally when coal is formed deep underground by a process of heating and compressing plant matter. The gas is trapped in deep coal seams (typically 300-600 metres underground) by water, which must be removed to stimulate the gas flow.

## CSG Extraction

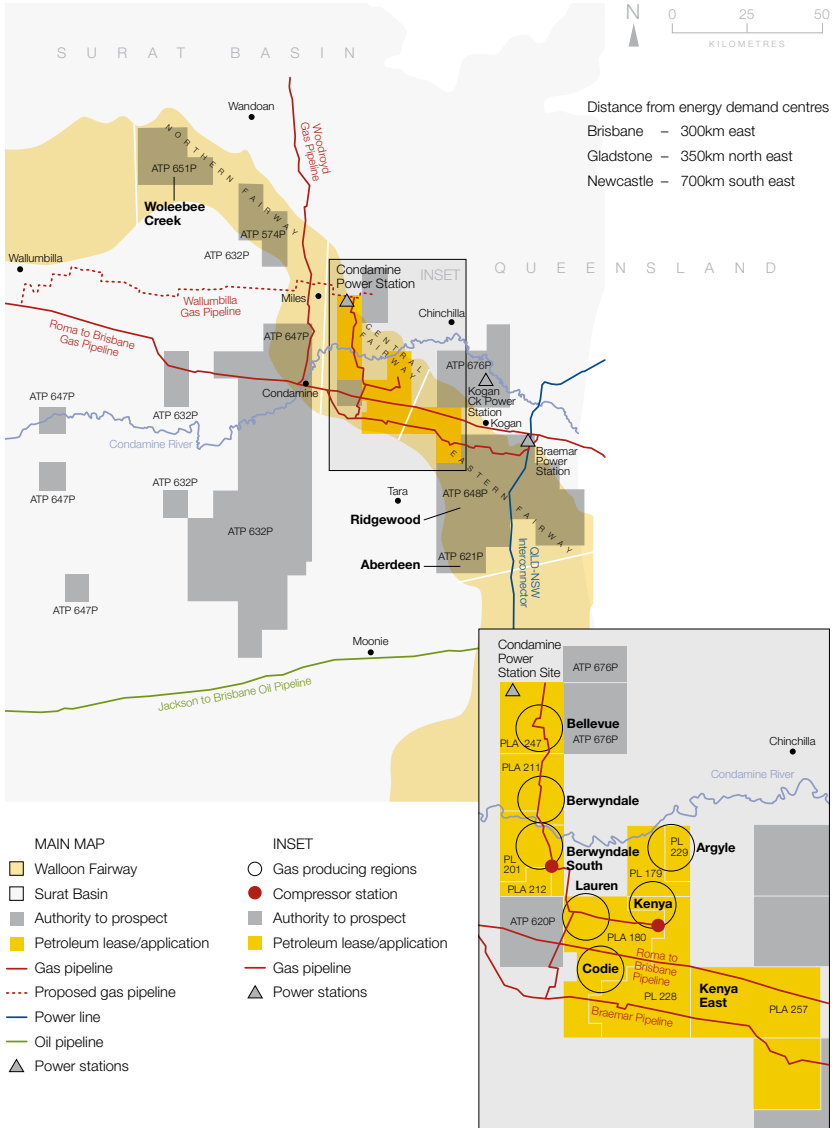
The CSG is extracted via wells which are drilled down through the coal seams. The water is pumped out, and the CSG is desorbed and released from the coal. If the pressure within the seam is high the gas may flow to the surface unaided, and if the pressure is lower the gas may have to be pumped to the surface.

Various techniques have been developed to enhance the rate of desorbition, including the pumping of CO2 underground to increase field pressure. (This “sequestration” of CO2 underground may also have environmental benefits if the CO2 would otherwise be released into the atmosphere.)

The amount of CSG present in the coal seams is estimated after various studies have been carried out on the extent and nature of the coal seams. An original-gas-in-place (OGIP) estimate is used to estimate the in-situ gas where limited technical studies have been undertaken, and provides an indication of the amount of gas that may be present in a specified area. An Economic Ultimate Recovery (EUR) factor is then applied to provide an estimate of the proportion of the OGIP which may eventually be economically recovered.



# QGC tenements and the Walloon Fairway



**“We have probably the most productive area for coal seam gas on the planet.”**

**QGC Chief Operating Officer Michael Herrington**

