

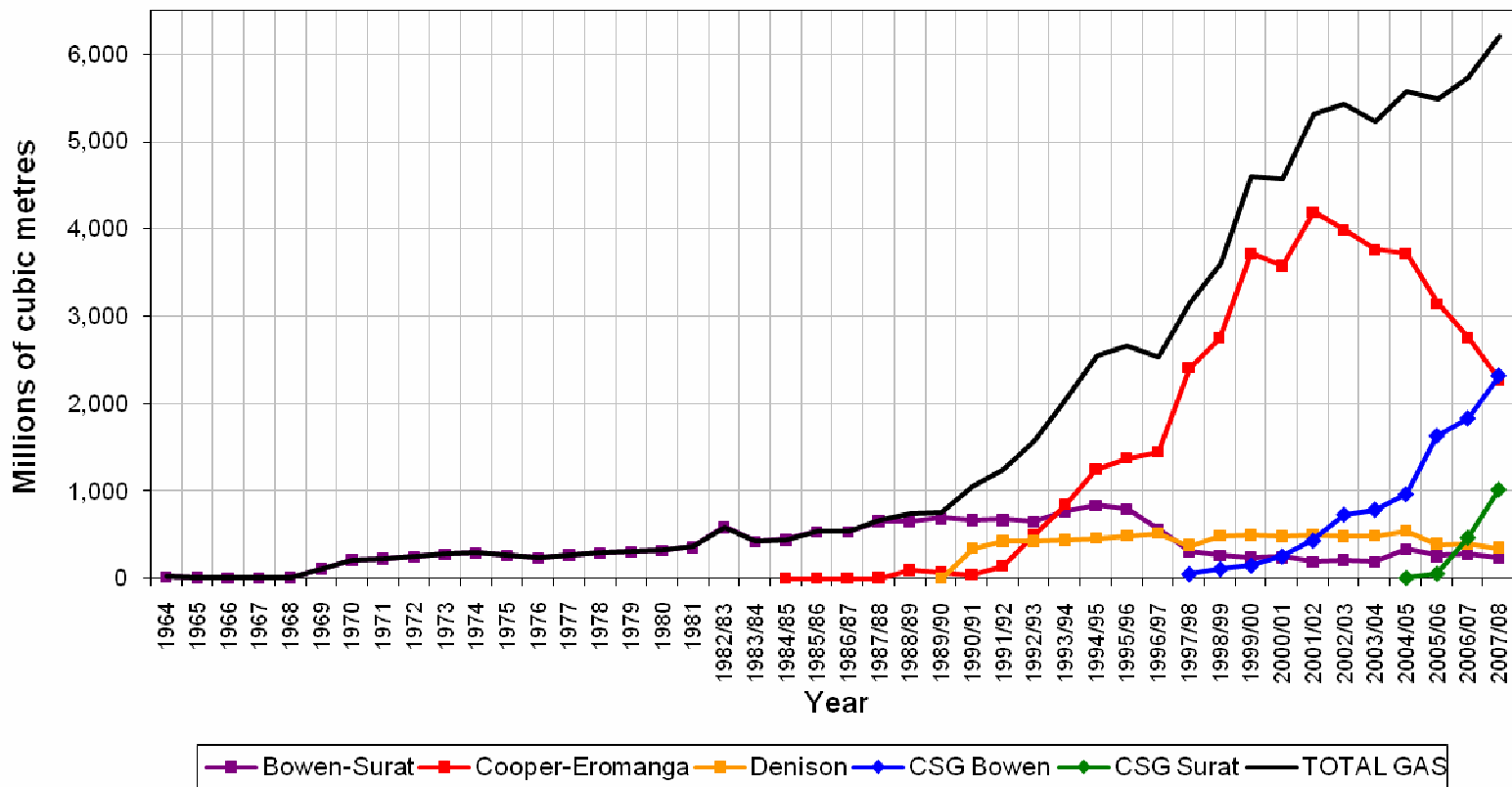
CBM to LNG: a New Export Industry for Queensland



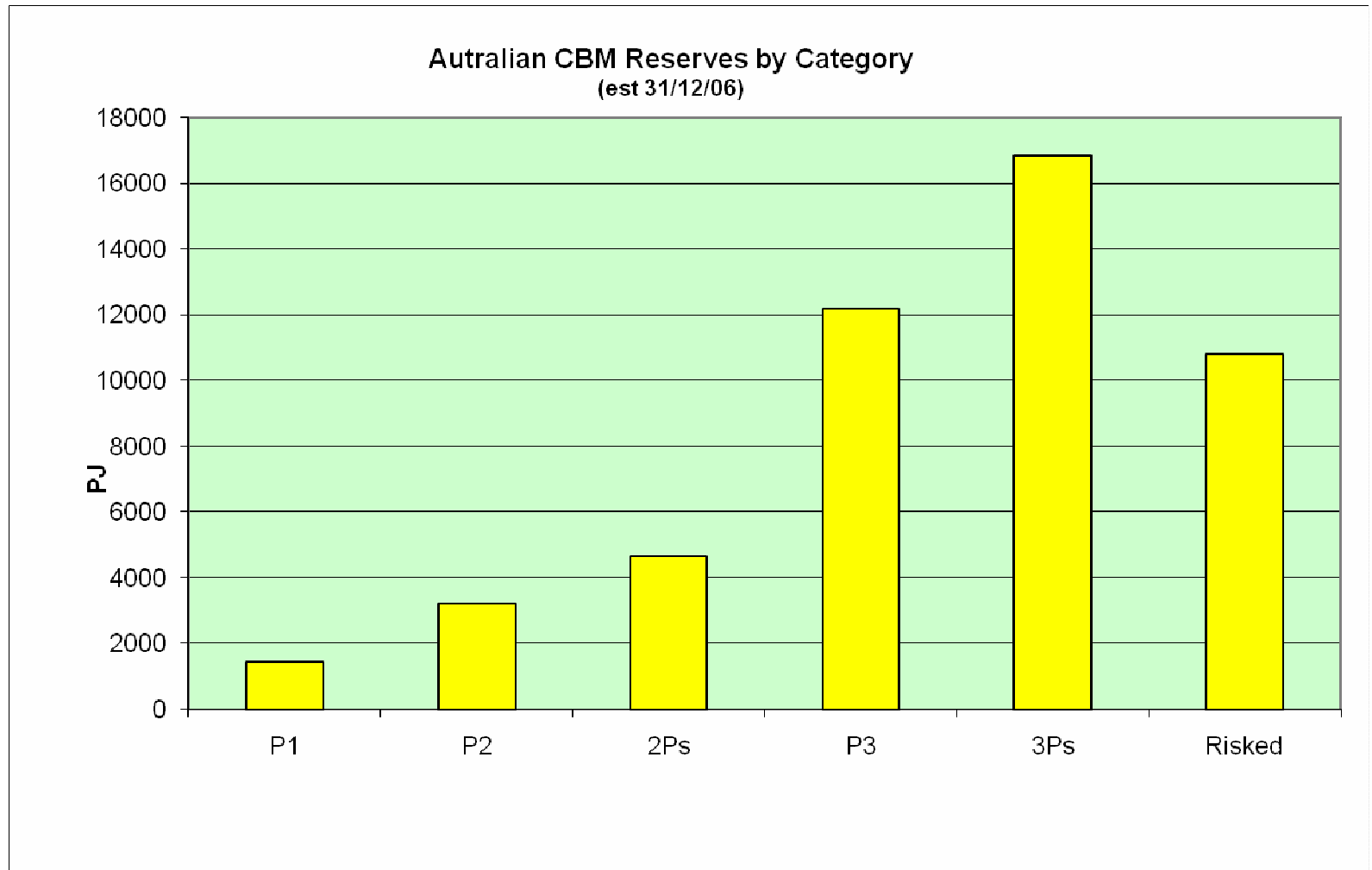
Presentation to the Australian Institute of Energy
26 May 2009, Brisbane, Australia

Dr Paul Massarotto
Principal Research Fellow, CBM & Geosequestration
School of Engineering, The University of Queensland

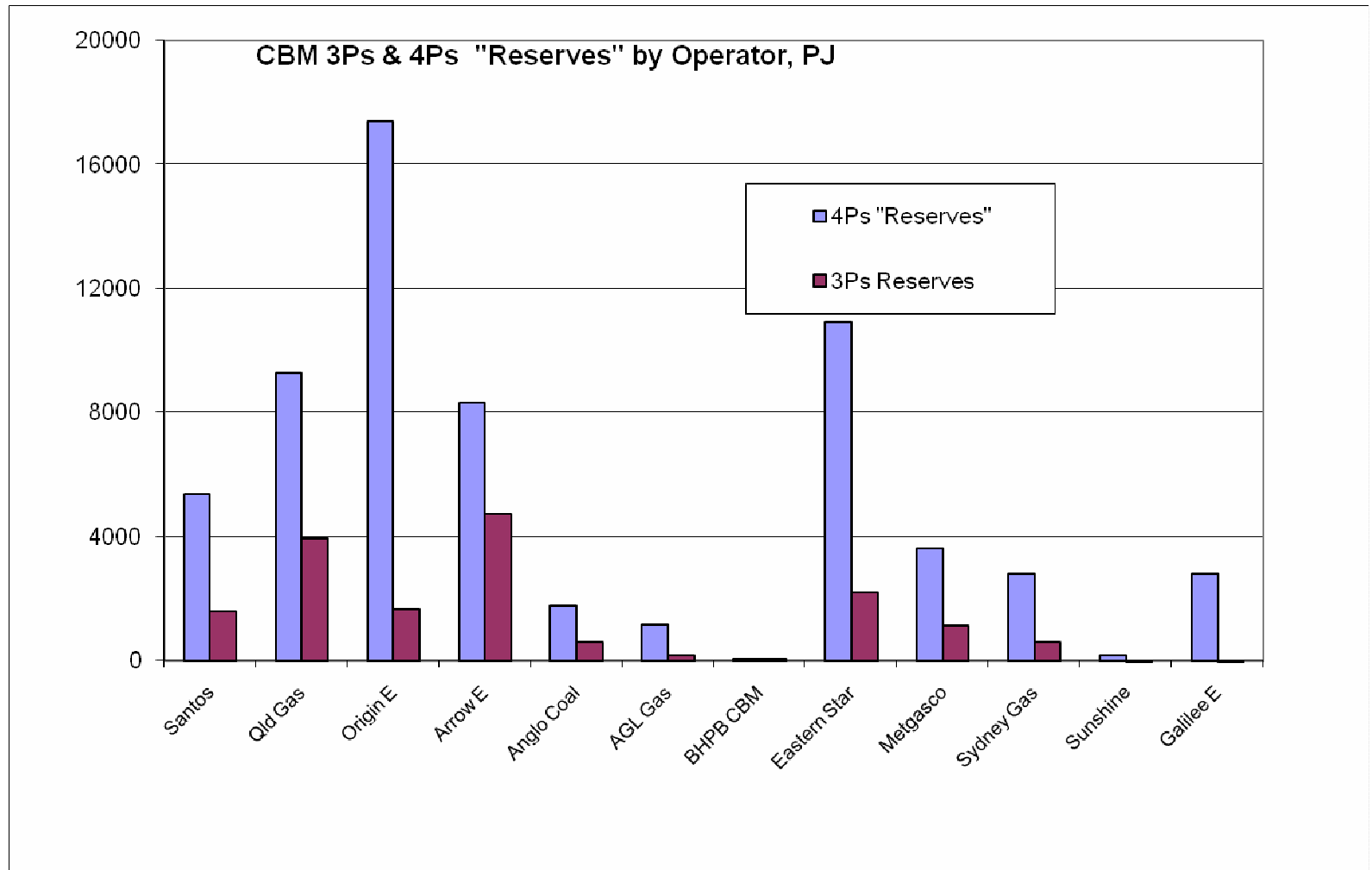
Queensland conventional and coal seam gas production



Australian CBM Reserves by Category (a/o Dec2006)



Australian CBM Reserves & Resources by Operator, (a/o Dec 2006)

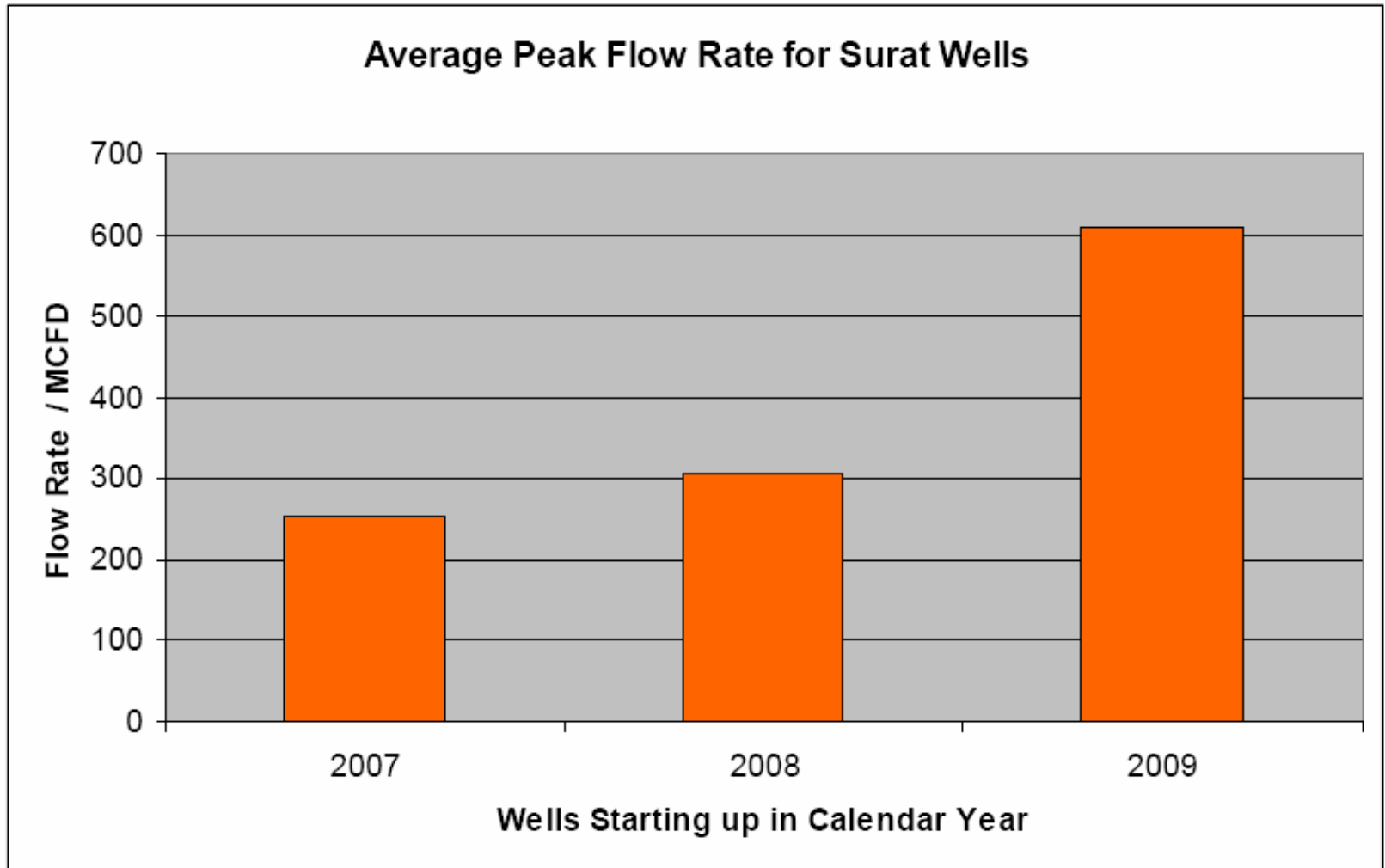


Arrow's Reserve position following acquisition of 40% of Tipton West from Beach

Reserves (PJ)	Current	Tipton Acquired*	Post-deal (AOE Net)
1P	259	111	370
2P	1,177	467	1,644
3P	3,676	1,115	4,791

*Shell has the right to acquire a 12% interest (30% of the interests being acquired) pursuant to the Tipton West Joint Venture agreements

Improvements in Deliverability of Arrow's Surat Wells; confidence for LNG developments





Gas Flare from recent Fort Cooper Coal Measure Pilot Well

Typical LNG facility for Gladstone area...
maybe 4 of these, single or double train of 3.5/4 Mt/yr ea.



ConocoPhillips' Darwin LNG Plant

Low cost/low complexity surface producing facilities for CBM (from APLNG)



Gas Flare from recent Fort Cooper Coal Measure Pilot Well



Plate 1 APLNG operating CSG wells

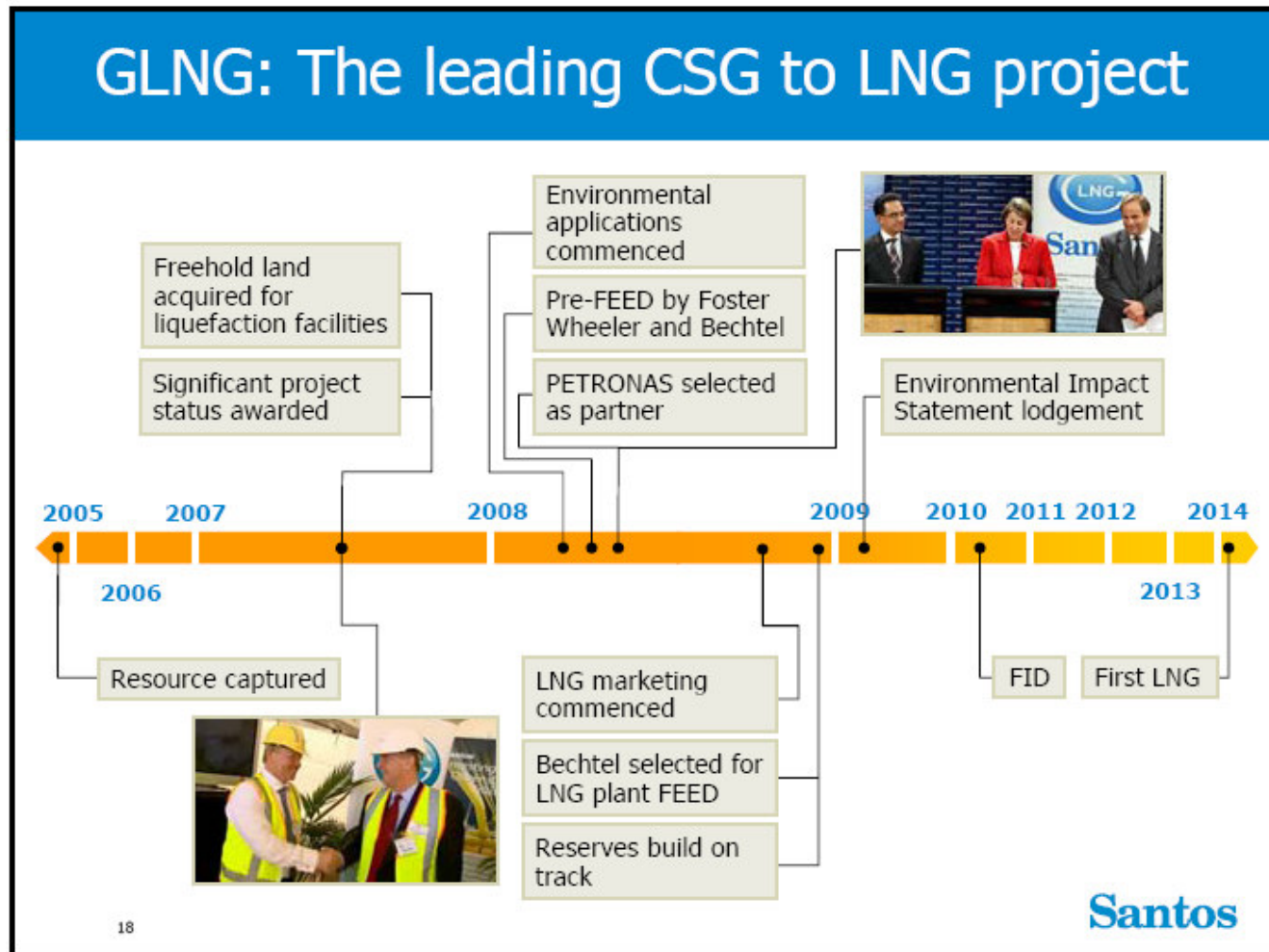
Santos' ever-increasing conversion of CBM Resources to Reserves

Coal Seam Gas Reserves & Resources	GLNG Dedicated Areas ¹	
	2008	2007
PJ (as at 31 Dec)		
1P	1,167	545
2P	3,246	1,344
3P	5,999	4,000
Contingent resource ²	2,647	4,798

¹GLNG dedicated areas as per ASX release of 29 May 2008.

²Contingent resource is defined as mid (2C) contingent resource estimate.

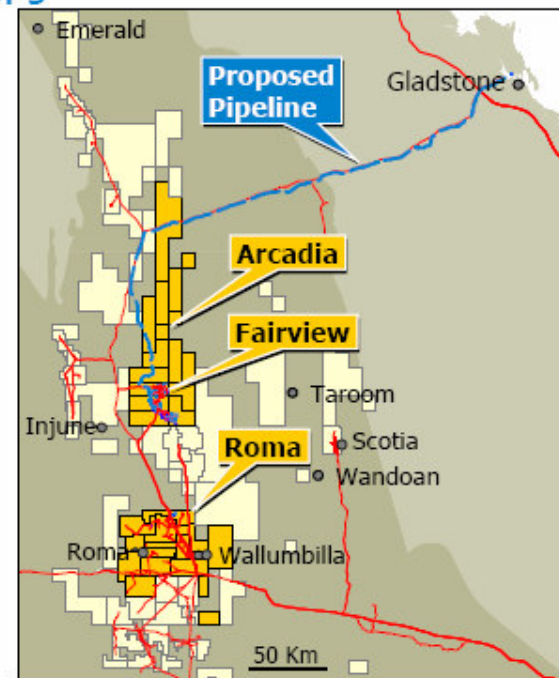
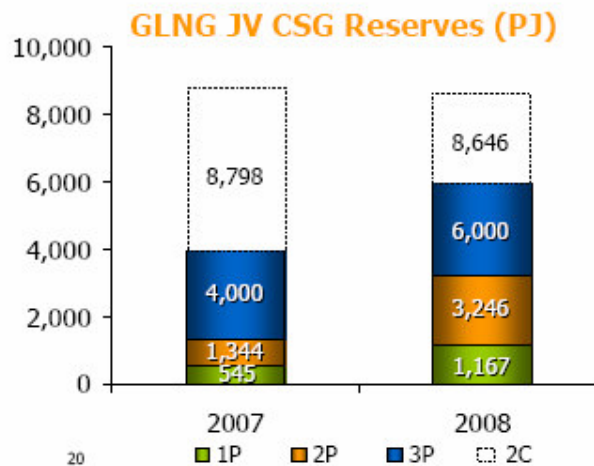
Gladstone LNG Project of Santos/Petronas



GLNG: Building the reserves

2P reserves up 142% to 3,246PJ

- 95% of 2P reserves uncontracted and available for GLNG project
- 2008 program successful in converting resources to reserves, and conversion of possible to proved and probable



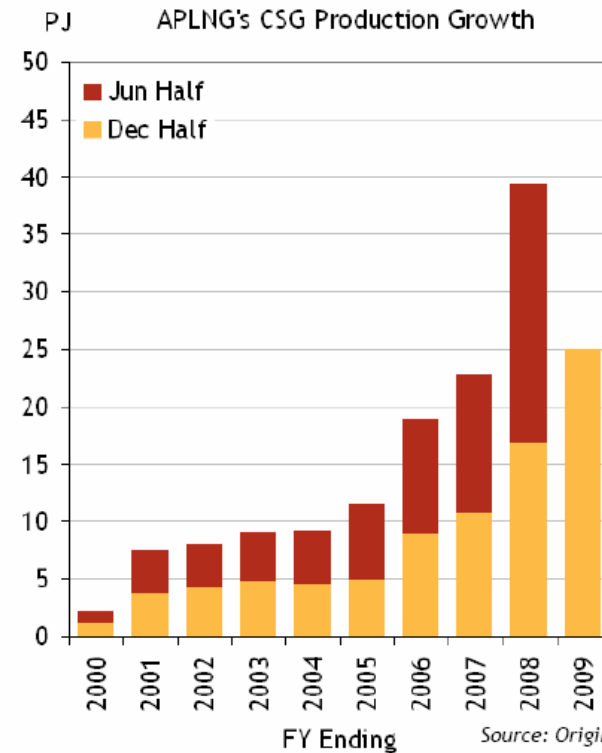
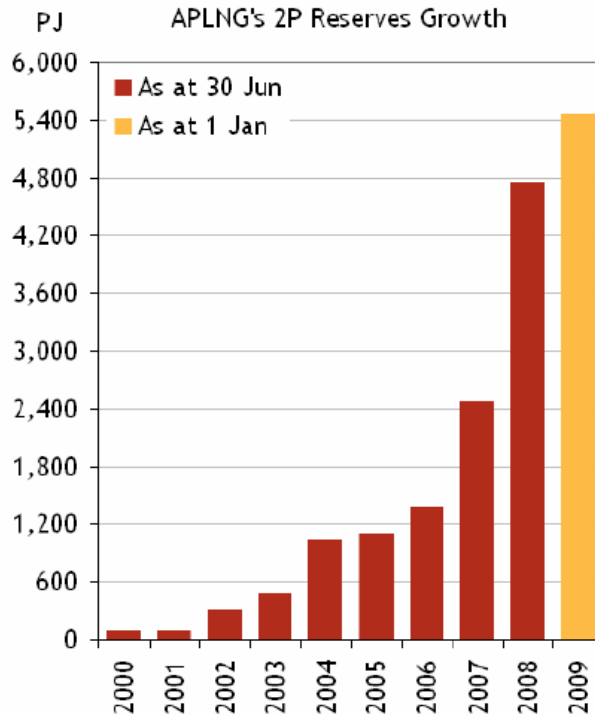
■ GLNG JV acreage
■ Other Santos acreage

Santos

Asia Pacific LNG (Origin & Conoco 50/50)

(from Origin Press release)

APLNG continues strong growth in CSG reserves and production



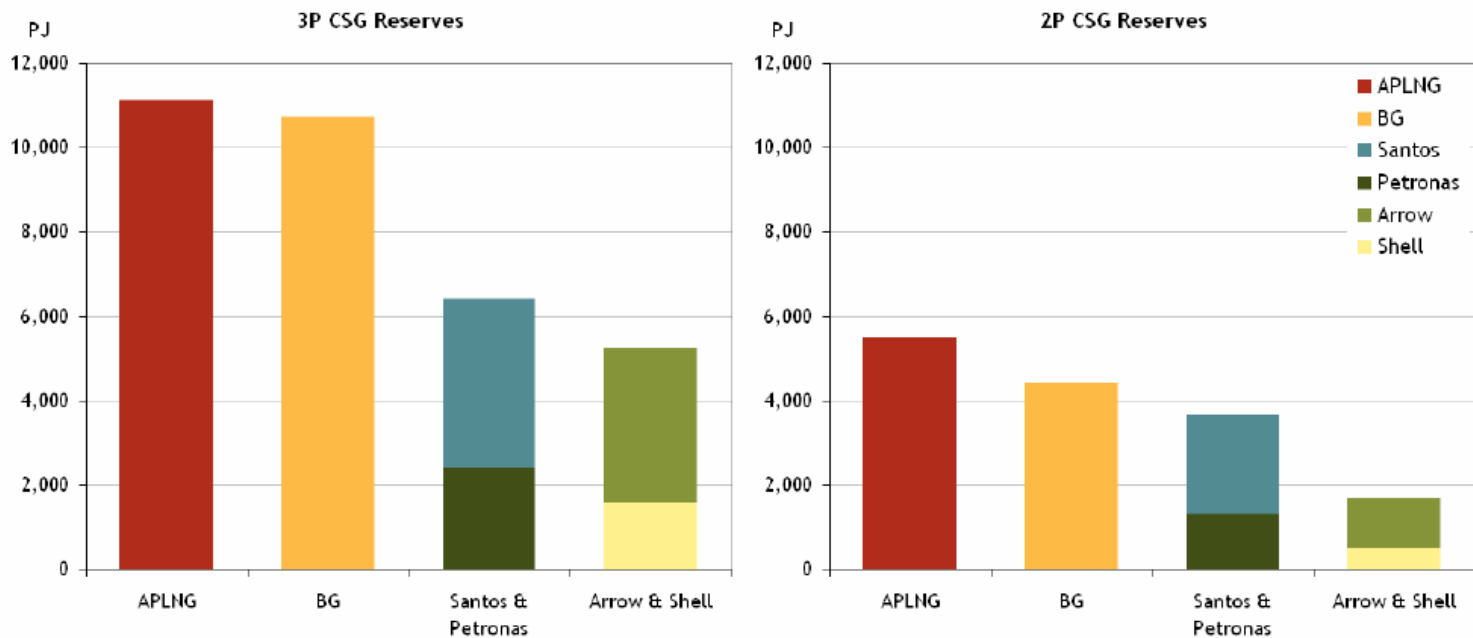
APLNG now supplies the equivalent of 25% of Queensland's gas and will increase production into the domestic market to over 100 PJ per annum by 2011

6 Notes: Origin has a 50% interest in APLNG
Reserves as at 1 January 2009 are shown net of CSG production for H1 FY 2009



APLNG strong position, showing early investment in Surat Basin (from Origin Press release)

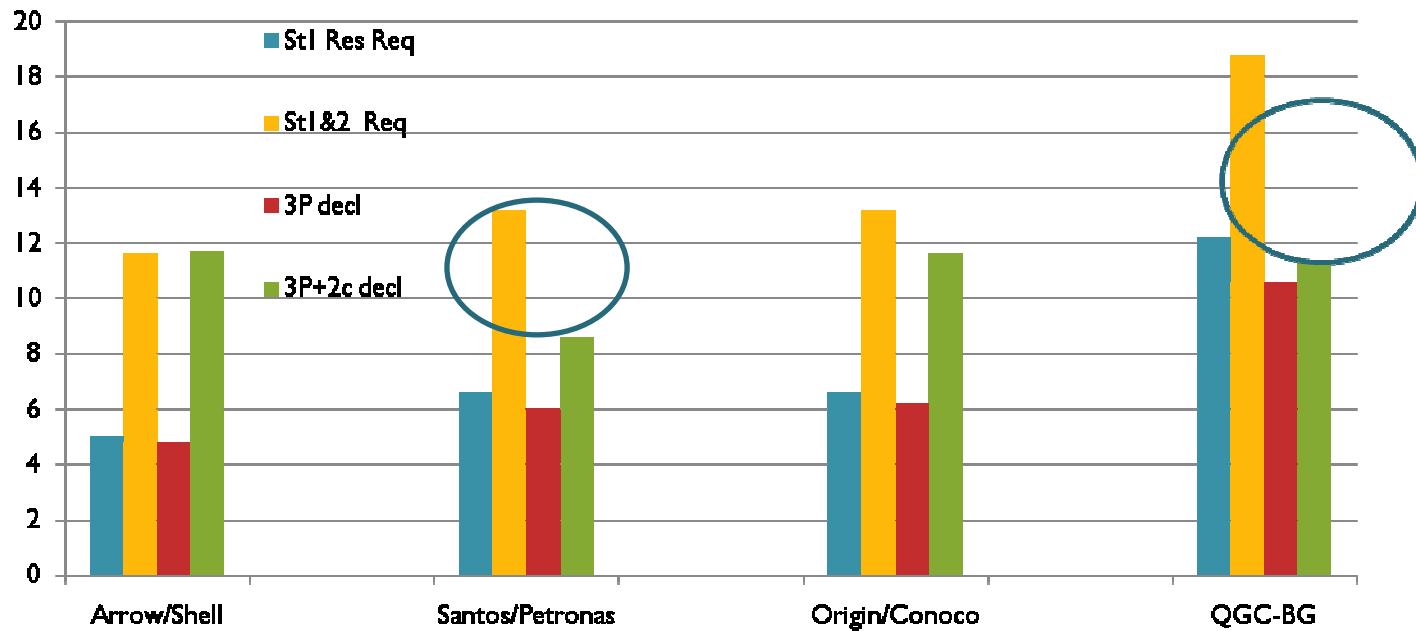
APLNG has the leading CSG reserves position...



Source: Origin based on EnergyQuest data

... with a plan to mature reserves sufficient to support FID for a multi-train LNG project by the end of 2010

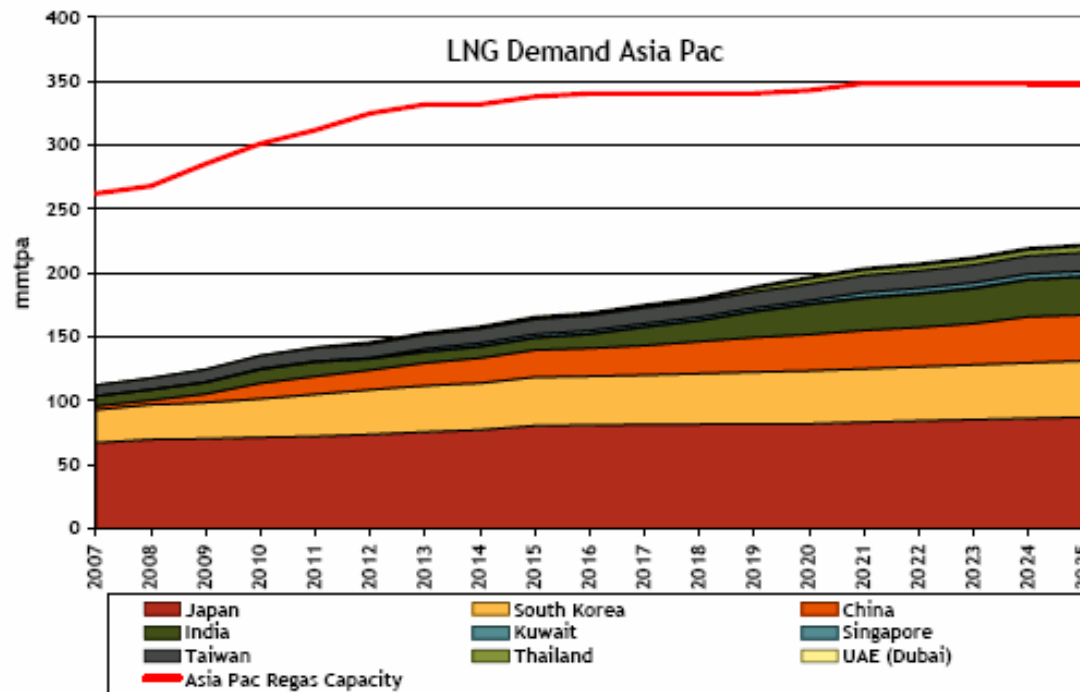
Required Reserves for LNG Projects (Stages I & 2) vs Available Reserves (3P) & Resources (2c), TCF



LNG Market in Asia Pacific strong and growing

(from Origin Press release)

Continued growth is forecast for LNG demand in the Asia Pacific in both traditional and emerging markets



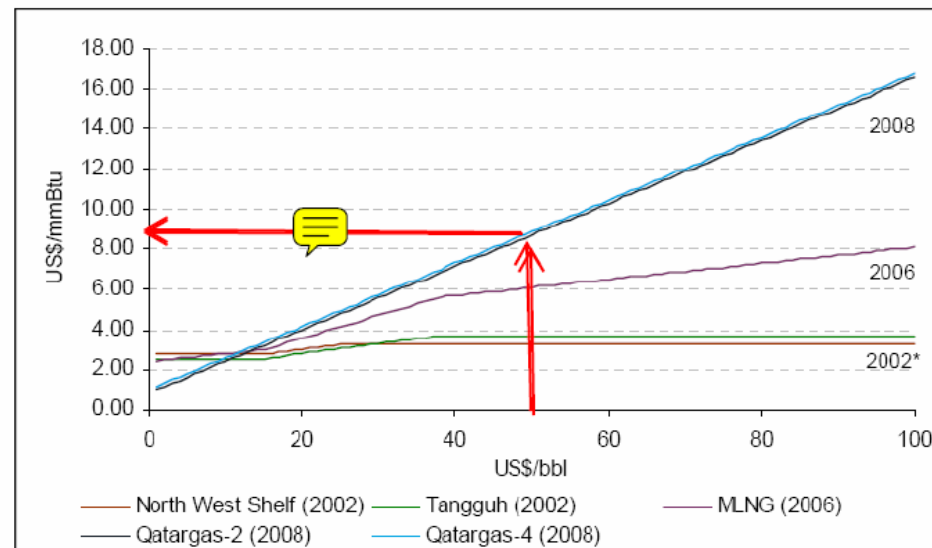
Source: Origin based on Wood Mackenzie, Global LNG Online, LNG Insights May 2009

... and while the near term outlook could deteriorate with the economic crisis, existing re-gasification capacity is likely to ensure a rapid recovery when conditions improve

LNG pricing approaching crude parity in Asia

In the Asian market in particular there has been a trend towards oil price parity...

LNG Pricing in Asia Pacific



Source: Origin based on Wood Mackenzie, Global LNG Online, LNG Insights April 2008

... which has resulted in higher netbacks for gas and has been a key driver of emerging interest in CSG



Conclusions

- There are sufficient current CBM reserves (24.6 TCF of 3P's) in high-perm coal seams to mostly support Stage 1 of announced LNG projects (30.6 TCF at 30 years)...5 LNG plants
- There are significant CBM resources in current fields to address some 60% of Stage 2 developments (17.5 of 26.4 TCF)...4 LNG plants
- With over 200 TCF of probable resources available for conversion to reserves, another 20 LNG plants could be supported.
- The Asia Pacific demand for LNG looks favourable for many years, with crude-parity pricing (now ~\$US9/GJ) expected to yield good netbacks to CBM producers.