

UK Shale Day Highlights

- **We recently attended a UK shale gas conference in London.** Around 80 representatives from institutional funds, family offices, high net worth individuals and industry representatives were in attendance. Presentations were held on the UK shale gas industry, the potential size of the UK shale resource, myths around hydraulic fracturing (fracking) and the similarities and differences to the US shale experience. Key industry participants Cuadrilla Resources, INEOS, and IGas also gave an update on their plans and drilling progress.
- **Cuadrilla wells are currently drilling ahead** Cuadrilla Resources (AJL owns 47.4% of Cuadrilla) is currently drilling two wells in its Bowland shale acreage. The wells are currently at a depth of 1,200m and core sampling has commenced, with the shale noted as being “consistently good” to date. Cuadrilla is now assessing where to best place the horizontal sections of the well. Drilling is scheduled to be completed in early 2018, with fracking and flow testing to then be undertaken in 2Q18.
- **What initial flow rate is Cuadrilla expecting?** As with all new shale plays, they are a bit of a science experiment which require data from trial and error of different drilling and fracking techniques is required to make an assessment of the shales potential. With very limited information available to date (only one other Bowland shale well has been drilled previously), it is difficult to quantify what initial flow rate we should expect from these upcoming wells. Cuadrilla has stated it has looked at the potential of the Bowland via type curves with initial production rates ranging from 5 to 17 mmscf/d. This range is consistent with US shale play rates.
- **Bowland shale is “world class”.** According to Imperial College Petroleum Geoscience Professor Alistair Fraser, the Bowland shale is “world class”, and as good as many of the shale basins in the US. The northern UK shales such as the Bowland have a lot more carbonates, limestone, sandstone and silica material present, and are therefore more frackable when compared to shale in the south of the UK, while the Central Bowland shales near Swindon are geologically complex and unlikely to be developed. The kerogen type present in the Bowland is marine based (Type II), ie the same as key US shale plays. Prof. Fraser also stated the clay in the Bowland shale is sufficiently brittle for fracturing and is similar to that in the Bakken and Marcellus shale plays in the US.
- **Development concept slightly different to the US.** With no gas flows to confirm commerciality of the Bowland shale play, a development concept is just that at the moment – a concept. However, Cuadrilla envisages up to 30 wells per drilling pad, which is far more than in the US and is a result of the thickness of the Bowland shale. It forecasts an estimated ultimate recovery (EUR) of 6 Bcf per well, or 180 Bcf per pad. The British Geological Survey (BGS) estimates there is 1,329 Tcf of gas in place in the Bowland Hodder shale units in Northern England, and Cuadrilla has previously stated its licences contain approximately 25% (approximately 330 Tcf) of the total gas in place.
- **Well costs unsurprisingly higher than the US.** Cuadrilla forecasts that production wells could be drilled for around US\$15m each, however it sees potential for this to come down over time, once technical advances in the US are applied. As a comparison, horizontal wells in the Eagle Ford shale in the US are drilled for around US\$7m. Exploration wells in the UK are around US\$20m due to the higher level of logging, and testing when compared to production wells.
- **Biggest hurdle is planning.** The industry association UK Oil & Gas believes the UK has one of the toughest regulatory systems in the world, National government targets, combined with local decisions, make for difficult bed fellows, and as a result, companies have seen significant delays in obtaining planning approvals.

5 December 2017

Price	A\$	0.28
ASX		AJL.ASX
Shares o/s	m	585.2
Free Float	%	33.5
Market Cap.	A\$m	161
Net Cash	A\$m	-85.1
Net Debt/Equity	%	87
3mth Av. D. T'over	A\$m	0.02
52wk High/Low	A\$	0.42/0.19

DIRECTORS & MANAGEMENT

Name	Role
Phil Arnall	Chairman
John O'Neill	Non-Executive Director
Julian Ball	Non-Executive Director
Ian Meares	Non-Executive Director
Andrew Purcell	Non-Executive Director

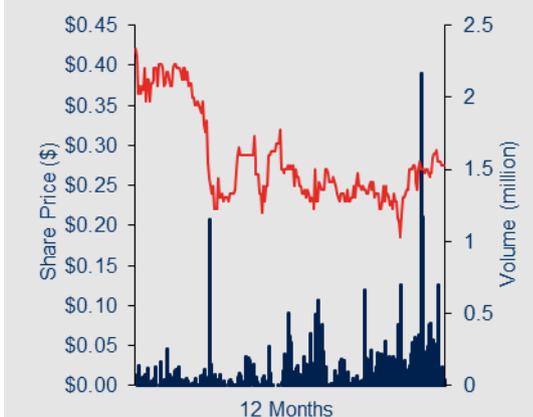
TOP SHAREHOLDERS

Name	Shares (m)	%
Kerogen Capital	342.8	58.6
Paul Fudge	46.1	7.9

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Disclosure: PSL acted as Lead Manager to a share placement that raised A\$21.1m at A\$0.21/share in March 2016. It also acted as Lead Manager to a share placement and entitlements offer that raised A\$53.2m at \$0.275/share in May 2017. PSL received fees for these services.

12 Month Share Price Performance



Performance %	1mth	3mth	12mth
Absolute	-14.9	-18.4	-42.0
Rel. S&P/ASX 300	-13.7	-20.3	-48.0



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