Oil & Gas: Explorer

EXR.asx
Speculative Buy

ELIXIR PETROLEUM LIMITED (EXR)

"I have some good news and some bad news"

Elixir Energy Limited ('EXR' or the 'Company') have released mixed drilling results over the past two months, and the volatility in the share price has reflected this. The objective of the two-core hole exploration programme was to prove up thick gassy coal seams in two separate sub-basins, below 300m. Unfortunately, the first core hole, Ugtaal-1, came in well below expectations. However, the disappointment of the initial Ugtaal-1 core hole, has now been superseded by an encouraging initial result at Nomgon-1.

At Ugtaal-1, both permeability and gas content results were lower than expected. The Ugtaal-1 result was a very disappointing start to the exploration campaign, we were particularly surprised with the low gas content given the company had undertaken extensive pre-drill analysis. Our 12-month target price of 10c at initiation (see our report ''So twice five miles of fertile ground' (7th October 2019)) was based on both core holes having a positive outcome. Despite, the extensive pre-drill analysis undertaken by the Company, the location of these core holes (in a vast PSC) is still heavily reliant on historical third-party data that the Company has gathered. It would seem that the 3rd party data at Ugtaal-1, especially regarding the coal quality at this location, was incorrect or inaccurate. This is a general risk when exploring for unconventional oil or gas in a frontier basin. Thankfully, the initial results from the second core hole, Nomgon-1, have been encouraging. Nomgon-1 is in a different sub-basin within the PSC, 37km to the South-West of Ugtaal-1. The hole reached a TD of 491m. 82 metres of net coal was intersected, with the thickest coal seam of 51 metres (from 373-424m). Observable coal qualities are predominantly C3-C4, with 'visible' coal quality according to the Company encouraging for gas content and permeability. However, these cores have now to be tested for both. The initial result here is encouraging and obviously significantly better than Ugtaal-1. The Company is now undertaking testing for gas content with permeability testing to follow.

Downgrade to our 12-month forward valuation post Ugtaal-1.

The Company has just over $2m in cash at the end of December, with expected March quarter outgoings of circa $800,000. Therefore, a further capital injection will likely be required ahead of the planned 2020 work programme. Therefore, given the disappointment of Ugtaal-1, and the need for further capital, a positive outcome from the Nomgon-1 gas content and permeability testing is now obviously crucial. The failure of Ugtaal-1 has increased the pressure on EXR, both in terms of the reliance on a positive result from Nomgon-1, but also its ability to raise capital at a reasonable cost given the negative impact it had on its share price. We have lowered our 12-month target price to 8c from 10c due to the greater risk of dilution and increased risk (reliance on a single well). Anything less than a positive outcome from testing (good gas content and permeability indicators) at Nomgon-1, given the need for additional capital for the 2020 exploration programme, will likely see significant downside again in the share price. We continue to see material upside in the event of a successful test, however, the risk for investors in EXR has obviously increased since our initiation report was published in October 2019. All eggs are now in the Nomgon-1 basket!

	12 Feb 2020
Share Price:	$0.048
12mth Price Target:	$0.080

Brief Business Description

EXR is a CBM explorer focused on the Nomgon IX PSC in Mongolia.

Hartleys Brief Investment Conclusion

The Nomgon IX coal bed methane PSC (CBM production sharing contract) was entered into with the Mongolian Government in September 2018. The Company has drilled a two core hole drilling program, now awaiting testing results. The targeted coals seem to be laterally extensive, thick and with a high gas content. The local market opportunity is attractive and above ground risks seem manageable.

Key Personnel

Richard Cottee	Non-Executive Chairman
Neil Young	Managing Director
Stephen Kelemen	Non-Executive Director
B. Byambasaikha	Non-Executive Director

Top Shareholders

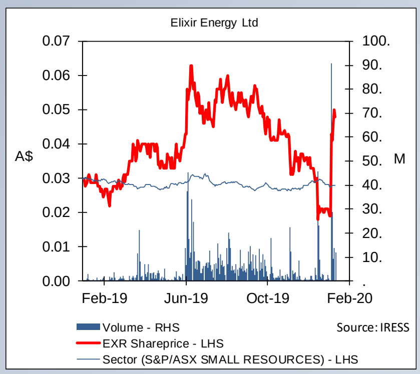
Neil Young	3.9%

Company Address:

Level 10, 50 Pirie street
Adelaide, SA, 5000

Target Price:	$0.08
Issued Capital:	500.9m
- fully diluted	654.1m
Market Cap:	$24.0m
- fully diluted	$31.4m
Current Cash (end March est)	$1.2m
Current Debt	$0m

Source: Hartleys Research



Authors:

Aiden Bradley
Energy Analyst
Ph: +618 9268 2876
E: aiden.bradley@hartleys.com.au

Hartleys has assisted in the completion of a capital raisings in the past 12 months for Elixir Energy Limited ("Elixir") for which it has earned fees.

SUMMARY MODEL

Elixir Energy Limited	Share Price		12 Feb 20
EXR	$0.0480		Speculative Buy

Key Market Information

Share Price	**$0.048**
Market Capitalisation	$24m
Net Cash (est end March 2020)	$1.2m
Issued Capital	500.9m
ITM options	0.0m
Options	153.2m
Issued Capital (fully diluted ITM options)	500.9m
Issued Capital (fully diluted all options)	654.1m
EV	$22.8m
Valuation*	**$0.08**
12Mth Price Target	**$0.08**

* Valuation is based on a risked value for Mongolian acreage.

Directors — Company Details

Richard Cottee	Non-Executive Chairman
Neil Young	Managing Director
Stephen Kelemen	Non-Executive Director
Bayanjargal Byambasaikha	Non-Executive Director

Top Shareholders	m shs	%
Neil Young	19.8	3.9%

Unpaid Capital	No (m)	$ (m)	Ave Pr	% Ord
31-Dec-20	110.7	7.5	6.79	22.1%
Variable	10.0	0.3	3.29	2.0%
Rights	32.5	-	-	6.5%

Valuation Summary

Asset	Valuation	
	A$m	cps
Nomgon IX CBM PSC (Mongolia)	55	10.93
Other Assets - Corporate	-12	-2.49
Total	42	8.44

Investment Summary

The Nomgon IX coal bed methane PSC (CBM production sharing contract) was entered into with the Mongolian Government in September 2018. The Company has drilled a two core hole drilling program, now awaiting testing results. The targeted coals seem to be laterally extensive, thick and with a high gas content. The local market opportunity is attractive and above ground risks seem manageable.

Key Permits / Prospects

	Net Interest	Value based on $/GJ multiples
Mongolia		
Nomgon IX CBM PSC	100%	A$55m
France		
Moselle Permit	100%	A$0m
USA		
Petra project	25%	A$0m

Expected News flow

		Project
CY18-19	PSC executed	Completed
CY18-19	Exploration License awarded	Completed
CY18-19	Detailed EIA and EMP approved	Completed
3Q CY19	2D Seismic acquisition	Completed
3Q CY19	Seismic Interpretation	Completed
2H CY19	2 core hole drilling program	Completed
1H CY20	Gas Desorption and testing	Mongolia
1H CY20	Book Contingent Resource	Mongolia
CY20-21	Pliot Project	Mongolia
CY20-21	Farm Out	Mongolia

Analyst: Aiden Bradley
Phone: 08 9268 2876

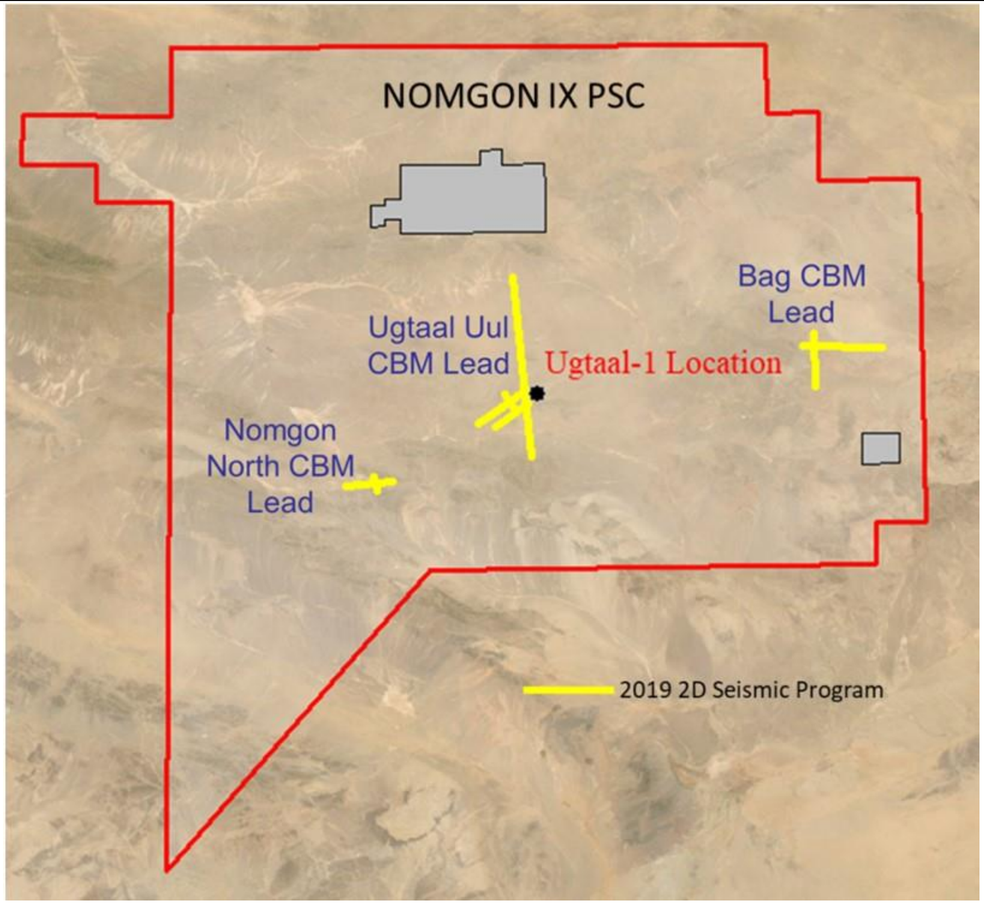
Last Updated: 12/02/2020

Sources: IRESS, Company Information, Hartleys Research

HIGHLIGHTS

Elixir Energy Limited ('EXR' or the 'Company') have released mixed drilling results over the past two months, and the volatility in the share price has reflected this. The objective of the two-core hole exploration programme was to prove up thick gassy coal seams at both locations, in two separate sub-basins, below 300m. Unfortunately, the first core hole, Ugtaal-1, came in well below expectations. However, the disappointment of the initial Ugtaal-1 core hole, has now been superseded by an encouraging initial result at Nomgon-1.

Fig. 1: Location of Ugtaal-1



Source: EXR

At Ugtaal-1, both permeability and gas content results were lower than expected ('at lower end of expectations' according to the Company). The well was drilled to a TD of 752m. Net coal of 43m was logged, with the thickest seem of 20m

The gas content testing is ongoing but preliminary findings also reflect the lower than expected coal quality. The low gas content is of particular disappointment to us at this early stage of exploration (permeability is usually the key challenge at this stage).

The Ugtaal-1 result was a very disappointing start to the exploration campaign, we are particularly surprised with the low gas content given the company had undertaken extensive pre-drill analysis. Our 12-month target price of 10c at initiation (see our report ''So twice five miles of fertile ground' (7th October 2019)) was based on both core holes being positive.

Additionally, two chip holes were also drilled in the Ugtaal sub-region and they were also disappointing (encountering net coal of 6 and 7 metres).

Despite, the extensive pre-drill analysis undertaken by the Company, the location of these core holes (in a vast PSC) is still heavily reliant on historical third-party data that the Company has gathered. It would seem that that the 3rd party data at Ugtaal-1, especially regarding the coal quality at this location, was incorrect or inaccurate. This is a general risk when exploring for unconventional oil or gas in a frontier basin.

Thankfully, the initial results from the second core hole, Nomgon-1, have been encouraging. Nomgon-1 in a different sub-basin within the PSC, 37km to the South-West of Ugtaal-1. The hole reached a TD of 491m. 82 metres of net coal was intersected, with the thickest coal seam of 51 metres (from 373-424m)

Observable coal qualities are predominantly C3-C4, with 'visible' coal quality according to the Company encouraging for gas content and permeability. However, these cores have now to be tested for both. The initial result here is encouraging and obviously significantly better than Ugtaal-1.

The Company is now undertaking testing for gas content with permeability testing to follow.

An exploration program for 2020 has recently been submitted to the petroleum regulator, the Mineral Resources and Petroleum Authority of Mongolia (MRPAM). This comprises a flexible work program of further 2D seismic and drilling.

Fig. 2: South Gobi CSG Expectations (vs Bowen Basin)

PROPERTIES	BOWEN BASIN (QUEENSLAND)	SOUTH GOBI (MONGOLIA)		COMMENTS
Seam thickness	Maximum single seam thickness 30m	>55m found in multiple locations	✓	World class seam thickness and hence very high GIP per acre
Gas content	7-14 m^3/tonne in most productive areas	Up to 15m^3/tonne at Tavan Tolgoi	✓	High gas content
Permeability	Varies from 2-600MD	Unknown, but coal samples show good cleat formation with no calcite	?	Requires corehole testing
Presence of coal at depth	Considered optimally productive down to 900-1,000m, with potential deeper	Vast acreage position and evidence of substantial area with thick coal seams < 1,000m	✓	Compares favourably to world class CBM basins
Coal quality – ash content	Varies significantly but is ~30% in the most productive fields	~24% ash content	✓	Within ideal range
Coal quality – rank	Sub-bituminous to bituminous	Sub-bituminous to bituminous	✓	Analysis shows VR consistent with coals that have undergone gasification

Source: EXR Corporate Presentation, September 2019

The Company has just over $2m in cash at the end of December, with expected March quarter outgoings of circa $800,000. Therefore, a further capital injection (equity, sale or farm out) will likely be required ahead of the planned 2020 work plan.

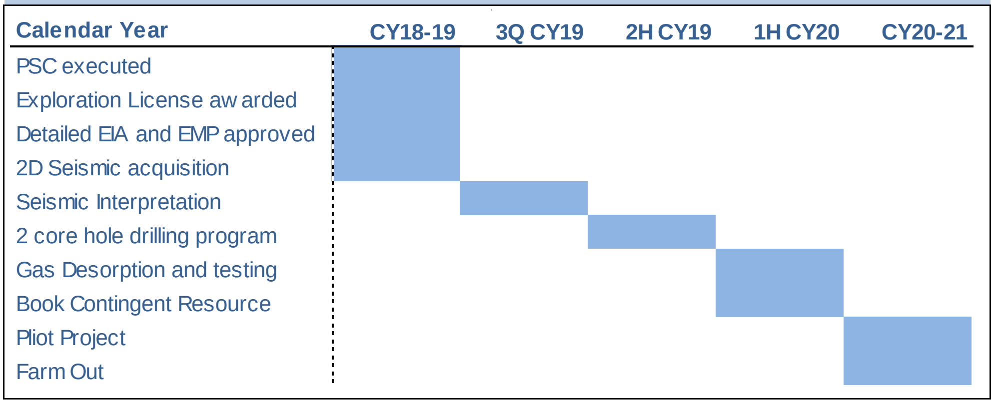
Therefore, given the disappointment of Ugtaal-1, and the need for further capital, a positive outcome from the Nomgon-1 gas content and permeability testing is obviously crucial.

RECOMMENDATION & RISKS

INVESTMENT THESIS & RECOMMENDATION

EXR has secured the first unconventional PSC (for CBM) in Mongolia under the updated Petroleum Law and with-it a circa 7m acre land position. The Directors have been operating in the CBM industry for over 20 years and in Mongolia since 2011. The local Mongolian management have an equivalent deep history of operating in the coal sector within Mongolia. The acreage surrounds a world scale coal mine and the Company has an independently certified prospective risked resource of over 7Tcf. EXR intended to start converting this to a contingent resource through an initial 2 core hole programme. If successful a larger pilot project in 2H20 is the objective. Getting a commercial CBM project up and running in Mongolia will not be quick or easy, however the local and export market opportunities if successful are material (high demand and high price potential). At the moment, EXR seem to be as advanced as any competing local CBM project and with an experienced management team, large gas in place footprint and an active funded appraisal programme is an interesting play on North East Asian gas demand (at the right price).

Fig. 3: Timetable of Events



Source: Hartleys and EXR.

We believe successful E&P companies have a combination of a focused, well thought out strategy combined with the competitive advantages to pursue it and the right management (with incentives aligned with shareholders) in place to implement it.

Strategy

EXR's strategy is currently focused exclusively on the CBM opportunity in the South Gobi region of Mongolia. The long-term goal is to develop a commercially viable CBM project to supply both the local and potentially the export markets. The nearer term objective is to maximise the value of the acreage through a staged development. Stage 1 is to drill 2 core holes to test the CBM production potential of the vast coal deposit in their acreage. If the testing is successful this should allow EXR to convert a proportion of their gas to a contingent resource. Stage 2 would likely involve further wells / a small scale pilot to test the producibility of the coals. At this stage the Company would likely need significant funding and a farm out of their current 100% holding is a possibility. Stage 3 would be a broader field development with a gas contract with a local customer key at this stage of development. It is our opinion that smaller E&P companies are likely to be more successful if they have a strategy focused on one particular area or play type.

Competitive Advantage

EXR currently has 100% ownership of the PSC covering circa 7m acres. The coal in the PSC is known to have a high gas content (data from wells within the Tavan Tolgoi mine indicate gas contents of up to 15m3/tonne (480 cf/ton) at depths of 467 metres below surface). The Directors have been operating in the CBM industry for over 20 years and in Mongolia since 2011. The local Mongolian management have an equivalent deep history of operating in the coal sector within Mongolia. The acreage surrounds a world scale coal mine and the Company has an independently certified risked prospective resource of over 7Tcf. Mongolia is a proven major producer of coal and has a mature (if inefficient) local power market and export routes to China.

EXR has gained considerable experience operating in Mongolia since its foundation and has an experienced team on the ground, supported by a similarly qualified Board. The decision to focus exclusively on CBM in Mongolia has allowed it to focus all their resources on trying to be successful in what is a frontier market with considerable risk and challenges.

Management & Alignment

EXR's Board and Management team includes very experienced Oil & Gas Executives, including a number who have spent most of their careers focused on the CBM sector or operating in Mongolia. However, it is a small Board and the Company is likely to require additional appointments as they move towards becoming a production company. Beyond the Directors, management and staff (appropriately) tend to be locally based.

While again, additional staff will be required as EXR's activity ramps up, the relatively modest fixed cost corporate overheads have been appropriate during what turned out to be prolonged period of negotiations and preparation. The Company spent $586,000 on Staff Costs in the 12 months to the end of June 2019 and a further $572,000 on Administration and Corporate Costs.

Board and management alignment with other shareholders are equally important to us when evaluating E&P companies. The Board at EXR have material exposure to the share price through their respective holdings.

Fig. 4: Directors' Beneficial Interest in Shares and Options

Economic Exposure of Board and Key management

Directors	Position	Ord Shares	Options / Perf Shares	Total
Richard Cottee	Non-Executive Chairman	250,000	22,500,000	22,750,000
Neil Young	Managing Director	19,760,809	17,500,000	37,260,809
Stephen Kelemen	Non-Executive Director	290,000	4,000,000	4,290,000
Total		**20,010,809**	**44,000,000**	**64,300,809**
	Percentage of issued capital	**4%**		**10%**

Source: EXR and Hartleys

Overall, we rate EXR an 'Above Average' (versus our coverage universe) on our indicative measures of performance. The focused strategy on Mongolia is a positive as is their prior management experience in CBM. Management also have alignment with shareholders through their material shareholdings.

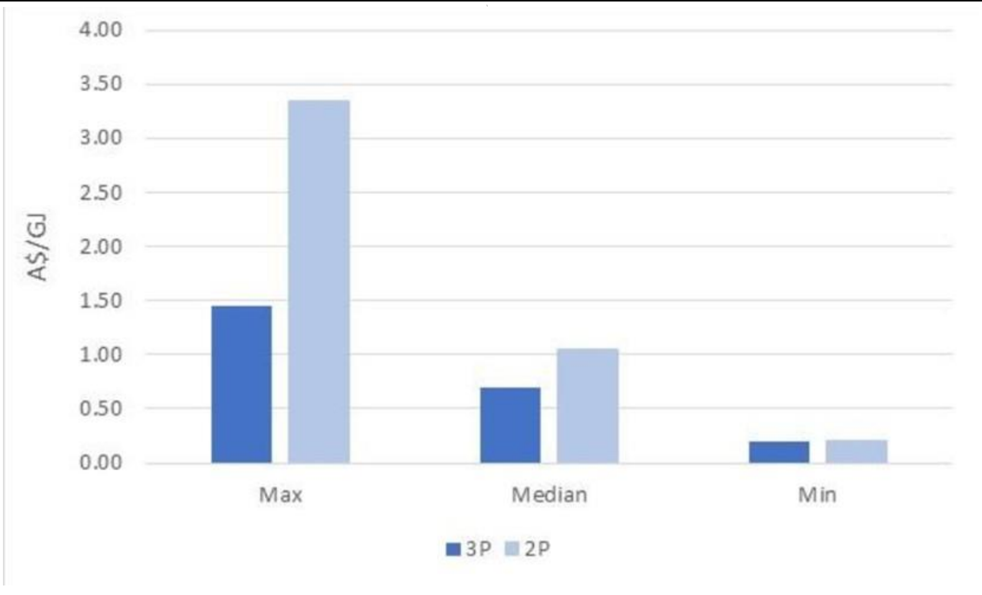
VALUATION AND RECOMMENDATION

Valuing early stage CBM companies is generally difficult, especially before drilling as a large number of key parameters for success remain unknown. This is especially true for a new frontier region such as the South Gobi, where there is no existing oil and gas industry at all (never mind CBM). Global comparisons are difficult as each region can be vastly different (different coal, access to infrastructure, services, market opportunity, regulatory and fiscal risk, realisable prices etc.). There is a growing CBM industry in China, which is now dominated by the large SOE's. However, smaller players have targeted new projects with varying degrees of success. ASX listed players such as DTE.asx and TNP.asx both tried to develop CBM/CMM projects in China, with limited success. Perhaps the best known international junior CBM player in China is G3 Exploration. Despite investing over US$270m and their large booked developing resource base, their market capitalisation has collapsed in recent years to less than 20m Sterling.

We looked at valuing CBM/CSG companies in our research on SXY, see ''Two-up' - A Transformational Year of Growth' (6th May 2019). We value undeveloped reserves and resources based upon historical transaction values for CBM assets.

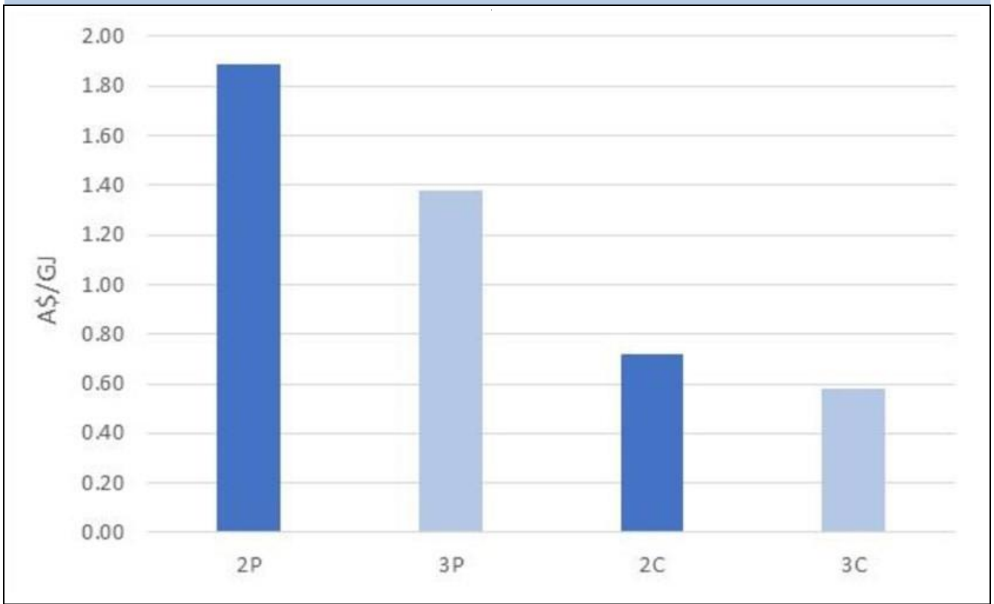
Transaction values can be unreliable as the price paid for specific assets can be influenced by a multitude of factors. Negative influences on EXR's acreage would likely be the perceived high sovereign risk and lack of infrastructure. On the positive side there is the potential low cost and high realisable prices. On balance, EXR's resource would we expect be likely valued at the lower end of the EV/GJ range by ASX investors. The first step in a re-rating will be to book a contingent resource. Based on historical transaction values and current ASX listed peers we would expect the market to value a contingent resource in the PSC at less than the peer group average of 20c/GJ. Assuming 5-10c/GJ, the current market capitalisation of EXR implies a potential contingent resource of circa 250-500PJ (compared to a risked BPR of 7.6Tcf). If the core testing is successful, then this is obviously a conservative assumption. Post a successful flow test and the booking of reserves, the valuation would increase dramatically as shown. As a relevant example, Lone Star acquired Sino Gas and Energy (SEH.asx) in 2018 for close to $1.50/GJ per 3P reserve.

*Fig. 5: CSG/Onshore Gas Transaction Multiples**



*Source: Hartleys and Industry Releases. * Transactions include STO/Kogas, QGC/BG, Pure Energy, Bow Energy, Arrow/Shell, ORG/Conoco and STO/Petronas.*

Fig. 6: Transaction Multiples by Reserve/Resource Category



Source: Hartleys and Industry Releases.

Over the next 6-12 months the key objective will be to book an initial contingent resource. If the current core testing is successful (in highlighting the potential producibility of the coal bed) then the next stage will be to drill further step out core holes or move directly to a pilot production test. Further capital will be required for any 2020 drilling campaign. With a current market capitalisation of circa $25m, the market is factoring in a very low conversion of the large current best prospective resource to contingent resources. While acknowledging that early stage CBM explorers are extremely difficult to value we forecast an increase in project value towards $40m over the next 12 months (based on a conversion of just 10% of the BPR to contingent resources and a greater than 50% EV/GJ valuation versus ASX peers and comparable transaction multiples). Subtracting a valuation for corporate costs and potential future equity dilution, results in a 12-month target price of 8c per share (down 2c per share). Based on the current share price discount to this target and near-term catalysts as outlined we rate EXR as a Speculative Buy.

RISKS

The key risks for EXR (like most junior oil & gas Companies including those with unconventional assets) is a combination of exploration/development success and performance of the production assets (if any).

Sovereign risk of operating in Mongolia is also important to consider. We also note that there no local gas producers within Mongolia (PetroChina and Sinopec do produce crude in the country) and it would force EXR to be a pioneer in the region.

Although some disappointments can be short term and are only a timing issue, other disappointments can be materially value destructive and can sometimes overhang stocks for a long period of time (for example over-estimating long-term flow rates). Such disappointments can be very difficult to predict and share price reactions can be severe and immediate upon disclosure by the company. High financial leverage (as exists at this time) would add to the problem. Investing in unconventional explorers/developers is very risky given the value of the company assumes that the market will recognise a portion of potential future value of wells not yet drilled before the results are known.

Fig. 7: Key assumptions and risks for valuation

Assumption	Risk of not realising assumption	Downside risk to share price if assumption is incorrect	Comment
Unsuccessful core tests. Inability to convert BPR to a contingent resource.	Medium	High	There remains a number of key parameters we do not know, that will determine whether the coals in the South Gobi region could support a CBM development. Poor results from the current drill program would obviously be a setback. Different seams/locations would need to be selected and tested.
Funding Risk	Medium	High	EXR looks to be funded for the current stage of exploration (~A$2m in estimated cash at the end of December). However, the next phases of appraisal will likely require additional funding, securing this at not too high a cost will obviously depend on success in the preceding stage.
Sovereign Risk	Medium	High	Mongolia ranks as a high-risk country to do business in. However, EXR have secured the country's first unconventional PSC under the updated Petroleum Law and we assume Mongolia remains a relatively stable country for foreign investment.
Equipment Risk	Low	Medium	To date EXR has secured the necessary equipment to undertake its appraisal and testing with relative ease. Perhaps surprising to some given Mongolia's lack of an oil and gas industry. We assume this continues to be a non-issue.
Conclusion	*We believe our contingent resource and relative valuation assumptions are reasonable, however EXR like many smaller unconventional explorers is a high-risk investment.*		

Source: Hartleys Research

SIMPLE S.W.O.T. TABLE

Strengths	Extensive acreage position of circa 7m acres (100% held) in the South Gobi basin, Mongolia. Substantial coal deposits in the region with proven contained methane. Potential local demand and Chinese export market opportunity. Relatively low-cost appraisal. Access to local service industry (seismic and drilling). PSC environment lowers regulatory risk. Strong in country relationships built up since 2011. Experienced CBM Board. Operating in Mongolia since 2011 and with strong local management.
Weaknesses	Unproven commercial flow rates. No local gas production in Mongolia, would be the pioneer in the industry. Further funding required. Lack of infrastructure. CBM developments can have a long lead time to development.
Opportunities	Location to Chinese gas market M&A potential. Strong domestic political desire to replace high emission coal power and heat generation with low emission clean-burning gas fired generation. 100% ownership provides flexibility.
Threats	High Sovereign risk. Market price for any gas produced remains uncertain. Conflict with the domestic coal sector a possibility. Conflict with other domestic stakeholders (including environmental) a possibility. Shifting regulatory environment.

Source: Hartleys Research

HARTLEYS CORPORATE DIRECTORY

Research

Trent Barnett	Head of Research	+61 8 9268 3052
Mike Millikan	Resources Analyst	+61 8 9268 2805
John Macdonald	Resources Analyst	+61 8 9268 3020
Paul Howard	Resources Analyst	+61 8 9268 3045
Aiden Bradley	Research Analyst	+61 8 9268 2876
Oliver Stevens	Research Analyst	+61 8 9268 2879
Michael Scantlebury	Associate Analyst	+61 8 9268 2837
Janine Bell	Research Assistant	+61 8 9268 2831

Corporate Finance

Dale Bryan	Director & Head of Corp Fin.	+61 8 9268 2829
Richard Simpson	Director	+61 8 9268 2824
Ben Crossing	Director	+61 8 9268 3047
Ben Wale	Director	+61 8 9268 3055
Scott Weir	Director	+61 8 9268 2821
Scott Stephens	Associate Director	+61 8 9268 2819
Rhys Simpson	Associate Director	+61 8 9268 2851
Michael Brown	Executive	+61 8 9268 2822

Registered Office

Level 6, 141 St Georges Tce	**Postal Address:**
Perth WA 6000	GPO Box 2777
Australia	Perth WA 6001
PH:+61 8 9268 2888	FX: +61 8 9268 2800
www.hartleys.com.au	info@hartleys.com.au

Note: personal email addresses of company employees are structured in the following manner: firstname.lastname@hartleys.com.au

Hartleys Recommendation Categories

Buy	Share price appreciation anticipated.
Accumulate	Share price appreciation anticipated but the risk/reward is not as attractive as a "Buy". Alternatively, for the share price to rise it may be contingent on the outcome of an uncertain or distant event. Analyst will often indicate a price level at which it may become a "Buy".
Neutral	Take no action. Upside & downside risk/reward is evenly balanced.
Reduce / Take profits	It is anticipated to be unlikely that there will be gains over the investment time horizon but there is a possibility of some price weakness over that period.
Sell	Significant price depreciation anticipated.
No Rating	No recommendation.
Speculative Buy	Share price could be volatile. While it is anticipated that, on a risk/reward basis, an investment is attractive, there is at least one identifiable risk that has a meaningful possibility of occurring, which, if it did occur, could lead to significant share price reduction. Consequently, the investment is considered high risk.

Institutional Sales

Carrick Ryan	+61 8 9268 2864
Justin Stewart	+61 8 9268 3062
Simon van den Berg	+61 8 9268 2867
Digby Gilmour	+61 8 9268 2814
Veronika Tkacova	+61 8 9268 2836

Wealth Management

Nicola Bond	+61 8 9268 2840
Bradley Booth	+61 8 9268 2873
Adrian Brant	+61 8 9268 3065
Nathan Bray	+61 8 9268 2874
Sven Burrell	+61 8 9268 2847
Simon Casey	+61 8 9268 2875
Tony Chien	+61 8 9268 2850
Tim Cottee	+61 8 9268 3064
David Cross	+61 8 9268 2860
Nicholas Draper	+61 8 9268 2883
John Featherby	+61 8 9268 2811
Ben Fleay	+61 8 9268 2844
James Gatti	+61 8 9268 3025
John Goodlad	+61 8 9268 2890
Andrew Gribble	+61 8 9268 2842
David Hainsworth	+61 8 9268 3040
Murray Jacob	+61 8 9268 2892
Gavin Lehmann	+61 8 9268 2895
Shane Lehmann	+61 8 9268 2897
Steven Loxley	+61 8 9268 2857
Andrew Macnaughtan	+61 8 9268 2898
Scott Metcalf	+61 8 9268 2807
David Michael	+61 8 9268 2835
Jamie Moullin	+61 8 9268 2856
Chris Munro	+61 8 9268 2858
Michael Munro	+61 8 9268 2820
Ian Parker	+61 8 9268 2810
Matthew Parker	+61 8 9268 2826
Charlie Ransom	+61 8 9268 2868
Heath Ryan	+61 8 9268 3053
Tom Shackles	+61 8 9268 2802
David Smyth	+61 8 9268 2839
Greg Soudure	+61 8 9268 2834
Sonya Soudure	+61 8 9268 2865
Dirk Vanderstruyf	+61 8 9268 2855

Disclaimer/Disclosure

The author of this publication, Hartleys Limited ABN 33 104 195 057 ("Hartleys"), its Directors and their Associates from time to time may hold shares in the security/securities mentioned in this Research document and therefore may benefit from any increase in the price of those securities. Hartleys and its Advisers may earn brokerage, fees, commissions, other benefits or advantages as a result of a transaction arising from any advice mentioned in publications to clients.

Hartleys has assisted in the completion of a capital raisings in the past 12 months for Elixir Petroleum Limited ("Elixir") for which it has earned fees.

Any financial product advice contained in this document is unsolicited general information only. Do not act on this advice without first consulting your investment adviser to determine whether the advice is appropriate for your investment objectives, financial situation and particular needs. Hartleys believes that any information or advice (including any financial product advice) contained in this document is accurate when issued. Hartleys however, does not warrant its accuracy or reliability. Hartleys, its officers, agents and employees exclude all liability whatsoever, in negligence or otherwise, for any loss or damage relating to this document to the full extent permitted by law.