## Elixir Petroleum – Mongolian CBM PSC



# Delivery of "Project Khiimori"





(ASX:EXR)

## **Elixir Investment Highlights**



- Golden Horde Ltd (GOH) was established in 2011 as a pure play Mongolian CBM gas (coal-bed methane CSG in Australia) exploration venture
- Elixir has an exclusive option to 30 September 2018 to acquire GOH for 79M shares in Elixir
- GOH has advised Elixir that it anticipates an award of a PSC (with >40 year tenure) in Q1 2018, after which the exploration phase (seismic and drilling) can begin
- GOH will have 100% permit ownership over 7 million acres (28,000 km²) with multi-TCF CBM potential
- Located close to the Chinese border in South Gobi coal producing basin desktop studies confirm area is highly prospective for CBM (Bowen Basin analogue)
- Substantial gas demand growth forecast in Northern China region & Mongolia itself
- De-risking of play could add significant value from early drilling results initial two well exploration drilling targeted for Q3 and Q4 2018
- Technical workshop in Brisbane confirmed all elements for a successful CBM project were present with focus now on finalising the 2018 work programme
- Minimum budgeted work programme of **US\$3M over the first two years** of the PSC term
- Larger work programme of US\$5-7M being considered to expand the exploration programme

# **Project milestones progressing**



- Deadline now passed for superior offer for GOH providing Elixir with exclusivity to acquire all of the shares of GOH on or before 30 September 2018
- GOH Managing Director recently visited Ulaanbaatar to progress discussions with the Mongolian authorities and initiate drilling discussions with service providers. Joint Elixir/GOH visit to occur in late February 2018
- Planning for 2018/19 work programme underway including studies to define "sweet spots" for initial drilling activity
- Technical due diligence now completed which included review of:
  - Existing well bore data;
  - Existing gravity and magnetic data;
  - Local coal analysis (see picture); and
  - Comparison to Australian analogues (e.g. Bowen Basin).
- Completion of technical studies on track for end Q1 2018
- Drilling contracts and locations expected in Q2 2018



## **Technical Workshop Outcomes – Brisbane 2018**



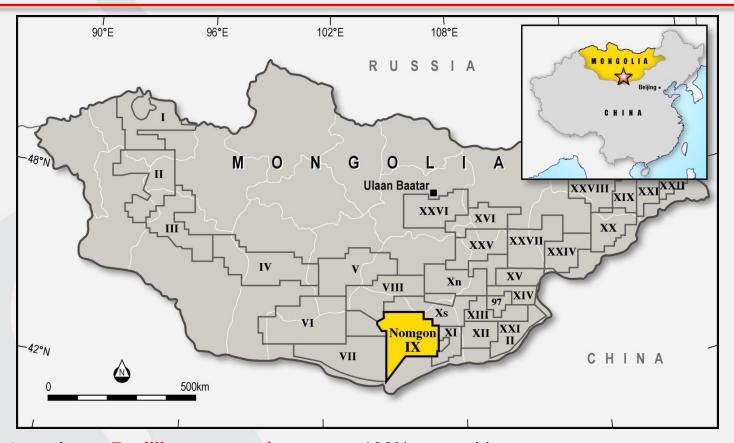
- Technical workshop held on Friday 19 January 2018 at Siecap offices in Brisbane
- CSG/CBM experts in geology, engineering, operations and commercial development met to discuss and opine on Project Khiimori and the forward exploitation plan
- Technical experts have broad experience in exploring and developing large scale CBM projects in Queensland, South East Asia and Southern Africa
- The workshop outcomes included the following key matters:
  - ✓ Independent confirmation that there were no technical roadblocks for a successful CBM development not already identified:
  - Development of a clearly defined forward exploration programme to give Project Khiimori the best chance of success;
  - ✓ That the coals within the area are thick enough and of appropriate quality to warrant an extensive exploration programme that evaluates not only the Permian coal deposits but also possible Jurassic coal sediments which are productive in the Surat (Walloon Coals) in Australia; and
  - Confirmation that the key unknowns (i.e. permeability, gas desorption rates and water production) can only be determined by exploration drilling and appropriate coring and test data



Steve Kelemen, Neil Young (GOH), Ray Barnes (Elixir), Dougal Ferguson (Elixir), John Henderson (Siecap), Rob Heath, Nick Hall, Glenn Smith and Greg Channon (Elixir).

## **Project Area Key Facts**

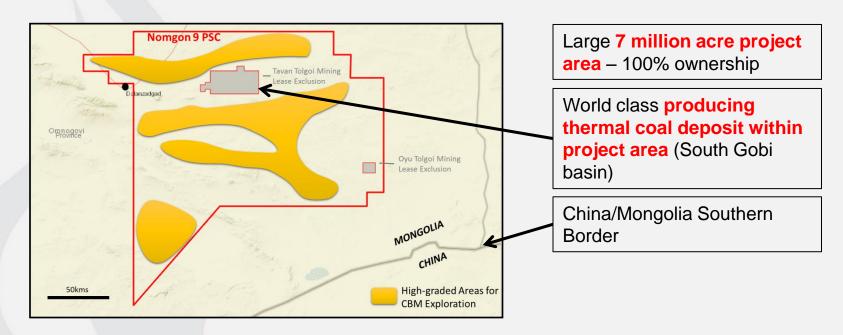




- Large 7 million acre project area 100% ownership
- World class producing thermal coal deposits within project area in South Gobi coal basin
- Close to border of world's 3<sup>rd</sup> largest gas user in Northern China
- Will be first unconventional hydrocarbon PSC to be issued in Mongolia
- Untapped multiple Tcf CBM gas potential
- First mover advantage initial drilling targeted Q3 and Q4 2018

## **Project Area Key Facts (cont.)**





- Technical studies indicate South Gobi Basin most prospective basin in Mongolia for CBM
- Data from Tavan Tolgoi indicate gas contents of up to 15m³/tonne (480 cf/ton), at depths of 467 metres below surface (high by world standards)
- Late Permian aged coals (Tavantolgoi Group) from surface to >1000m depth with individual seam thickness up to 55 metres (Ovoot Tolgoi Mine)
- Potential for Jurassic coals also to be present at depth and prospective for CBM
- As well as providing gas to the Mongolian market, Project Khiimori is ideally placed for sales gas exports into the main Chinese market

# **Key Technical Components for CBM**



	Properties	Bowen Basin (Queensland)	Block IX (South Gobi Basin)		Comments
	Seam hickness	Maximum single seam thickness 30m	> 55m found in multiple occurrences	✓	World class seam thickness – very high GIP per acre
C	Gas Content	7-14 m <sup>3</sup> /tonne in most productive areas	Up to 15 m <sup>3</sup> /tonne at Tavan Tolgoi mine	✓	High gas content
F	Permeability	Permeability varies from 2-600mD across the basin	Unknown, but coal samples show good cleat formation with no calcite	?	Requires core hole analysis from mid 2018 drilling
a	Presence of coal at appropriate lepth	Most productive coals typically less than 750m	Vast acreage position and evidence of substantial area with thick coal seams <1,000m	✓	Compares favourably to other world class CBM basins
	Coal Quality: Ash Content	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 (ideal for CBM)	✓	Analysis shows that vitrinite percentage is consistent with coals that have undergone gasification/methane generation

### **GOH's road to a CBM PSC**



- GOH executed a CBM Prospecting Contract with the Petroleum Authority of Mongolia (PAM) in January 2016
- Work under that Contract was finalised in 2016:
  - Data gathering and field prospecting summarised in a formal Prospecting Report delivered to the Mongolian authorities
  - Potential resources were estimated using data from the prospecting work with potential for multiple Tcfs of recoverable gas identified as a possible outcome (subject to a formal independent PRMS compliant Prospective Resource Study being undertaken)
  - A notional CBM exploration program was prepared appropriate for the proposed PSC area
- GOH then negotiated the commercial terms for CBM PSC over the licence area in line with Mongolia's Petroleum Law with the Minerals Resources and Petroleum Authority (MRPAM)
- The PSC is now subject to a **Ministry and Government approval process** which is anticipated to be received in late Q1 2018\*
- If the PSC is granted, Elixir intends to exercise the exclusive option and commence a CBM exploration program, with the ultimate aim being to book gas resources/reserves that can be commercially developed and delivered into the extensive and growing regional gas market

<sup>\*</sup>The timing for the award of the PSC is not known and there is a risk it will be delayed beyond 31 March 2018 or that it may not be awarded to GOH before the expiry of the exclusive option on 30 September 2018

## **Project Khiimori Milestones**

### Two Year Programme required to deliver key Milestones





- Technical Workshop concluded that initial 2D Seismic (circa US\$1M) recommended to substantially de-risk the exploration drilling programme
- Initial prospective resource certification expected to be completed within weeks of PSC award
- 2018 drilling expected to target lowest risk areas
- 2019 drilling (with benefit of 2D seismic) to potentially target the "Black Swan" Jurassic coal potential in addition to further Permian coal targets

Initial CBM exploratory wells will be adjacent to or within known coal deposit areas

Early Success Case – 2019 program will be accelerated with additional CBM wells

Base case is for one drilling program in 2018 and one in 2019 (2 wells each)

\*Subject to suitable equipment availability and government approvals

# **2018 Project Khiimori Milestones**

# EXR has commenced exploration activity pre PSC award date



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# **Elixir Petroleum Limited (ASX:EXR)**

### **Pro Forma Capital Structure**



#### **Pre Acquisition**

	Current (million)
Ordinary Shares (ASX:EXR)	221.4
Unlisted Options (ex 4.0 – 4.5 cents)	11.0
Performance Shares (Milestones)	5.0
Market Capitalisation (at 12.0c)	\$26.5
Cash at Bank	~\$3.0
Enterprise Value	\$23.5

### **Board & Management**

Ray Barnes	Non Executive Chairman	
Dougal Ferguson	Managing Director	
Neil Young*	Proposed CEO/Exec. Director	
Scott Patrizi	Non-Executive Director	

### \*Subject to completion of the Acquisition

### **Post Acquisition**

	Current (million)
Ordinary Shares (ASX:EXR)	300.4
Unlisted Options (ex 4.0 – 4.5 cents)	11.0
Performance Shares (Milestones)	22.5
Market Capitalisation (at 12.0c)	\$36.0
Pro Forma Cash (post Acquisition)	\$3.0
Enterprise Value	\$33.0

Performance Share Milestone	Shares
Completion of Acquisition	2.5
Prospective Resource > 1Tcf	12.5
FID approval on Pilot Plant	7.5
Total	22.5

## **Investment Summary**



- Modest total investment with long activity timeline and significant upside potential
- First mover status on ASX in Mongolian CBM space
- > 100% ownership and **control** over project essential for small company
- GOH has extensive relationships in Mongolia at both government and business level
- Clear commercialisation path through Chinese/local markets and infrastructure
- Next Steps and news flow over next 12-18 months
  - Anticipated award of the PSC (Q1 2018)
  - Initial Prospective Resources study to be undertaken as soon as possible (early Q2 2018)
  - Exploration work has already commenced (pre PSC award) with positive early feedback from technical workshop
  - First Drilling program in Q3/Q4 2018 (ideal drilling season)
- Ultimate monetisation 100% ownership allows multiple exit points, including farm-out or trade sale to larger regional player

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Information contained in this report with respect to the potential of the Mongolia PSC area was compiled by Elixir based on independently prepared reports provided to Elixir by Golden Horde Limited (GOH) and was reviewed by Mr Ray Barnes, a non-executive director of Elixir who has had more than 30 years' experience in the practice of petroleum geology. At this time, Elixir and Mr Barnes make no representations or forecasts with respect to the potential prospective resources that may be associated with the Mongolian PSC area.

Elixir makes no representation as to the timing of the award of the Nomgon IX PSC, nor does it make any representation as to the validity of the application or the likelihood of the PSC being awarded to GOH. Elixir has undertaken only limited due diligence to verify representations made by GOH and will complete detailed due diligence on the PSC title once the formal award of the PSC is made. The Acquisition is also subject to a number of conditions, the material ones of which are detailed in Appendix 1 of the Company's ASX release dated 17 October 2017.

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# **Appendix: Peer Companies in China and Mongolia**

Company	Summary of operations	Market Capitalisation
G3 Exploration (previously Green Dragon Gas) (LSE:G3E)	<ul> <li>China CBM play</li> <li>60/40 Joint Venture with Petro China</li> <li>3P reserves of 2.4 Tcf</li> <li>2P reserves of 549Bcf (approx. ½ of 1Tcf)</li> <li>Approximate area of 1.87 million acres</li> </ul>	GBP 99 Million ~A\$173 Million
Sino Energy (ASX:SEH)	<ul> <li>China CBM play</li> <li>Less than 30% net interest in complex Joint Venture with CNPC</li> <li>2C resources of 3.2 Tcf</li> <li>2P reserves of 2.1 Tcf</li> <li>Approximate 740,000 acres</li> </ul>	~A\$360 Million
Petro Matad (LSE:MATD)	<ul> <li>Conventional oil and gas in Mongolia</li> <li>100% interest in 3 PSC Blocks (IV, V and XX)</li> <li>No reserves or resources</li> <li>Well established oil explorer in Mongolia</li> <li>21,000 km² of prospective basins</li> </ul>	GBP 24 Million ~A\$42 Million
Elixir Petroleum (ASX:EXR)	<ul> <li>Option over the only current Mongolia CBM PSC</li> <li>100% owned PSC application (Block IX)</li> <li>Multi Tcf potential (to be confirmed in Q4 2017 with PRMS Prospective Resource Report)</li> <li>Over 7 million acres (28,000 km²)</li> </ul>	~A\$36 Million Post acquisition at \$0.12