



Gobi H2



*Port Jackson
Securities
Presentation*

26 July 2022

ASX:EXR

Gobi H2 Vision

1. 500,000 tonnes per annum of H2 sales

Annual revenues of US\$Bs

Scale-able upwards

2. 27.5 TWh p.a. of renewable electrical energy generated

6.3 GW of wind and solar capacity

5 GW of electrolyzers installed

3. 4.5M tonnes of coking coal replaced in target steel making market

11M tonnes of CO2 emissions avoided

4. US\$Bs of investment attracted to Mongolia

Major new Government tax revenues and **economic activity**

Replacement for coal exports

Gobi H2



SB Energy



SB Energy Corp. and Elixir Energy Ltd. Sign a Memorandum of Understanding to Cooperate on Research and Development of a Green Hydrogen Project in Mongolia

June 17, 2022



Elixir Energy

Company Overview

Elixir's main asset is its 100% owned Nomgon IX Coal Bed Methane (CBM*) Production Sharing Contract (PSC) project in the South Gobi region of Mongolia

Highly experienced CSG team – first mover in taking Australia's leading skills to Mongolia

Located on Mongolian/Chinese border with excellent infrastructure, mines and planned pipelines

This location provides many market options – including the *Gobi H2* project

Strong balance sheet funding aggressive exploration and appraisal program for years to come

* Coal Seam Gas – CSG – is usually referred to as CBM outside Australia



Capital Structure / Board

Capital Structure

Current (pre-raise)

No of Shares	892M
Performance Shares & Options	32M
Market Capitalisation (at 15c)	\$134M
Cash (at 31st March - unaudited)	\$25M
Enterprise Value	\$109M

Share Price



Highly experienced CSG team



Richard Cottee

Non-Executive Chairman

Former Managing Director of CSG focused Queensland Gas Corporation (QGC), taking it from market cap of \$20M to \$5.7B
Other former CEO positions include CS Energy, NRG Europe & Central Petroleum



Neil Young

Managing Director

Former Business Development Manager at Santos, where he helped build Santos' CSG business
Has worked in Mongolia since 2011



Stephen Kelemen

Non-Executive Director

Extensive technical and commercial career at Santos, including managing its CSG business
Current Non Executive Director at CSG focused Galilee Energy (GLL)



Anna Sloboda

Non-Executive Director

Previous employers include Lehman Bros, Clough, Curtin University & Trans-Tasman Resources
Ex-USSR background and experience of working in China



Introduction – Hydrogen 101

- Hydrogen (H₂) is the most common element in the universe - but very rare as an element on Earth
- Hydrogen is common as a constituent of molecules readily available on Earth such as water and methane
- H₂ can be obtained by separation processes from these. It is not a primary fuel source
- Hydrogen is therefore an energy carrier or vector – e.g. it can be used to move and store renewable electricity
- Combusting H₂ produces heat (similar to hydrocarbons such as CH₄) which can be used to generate electricity, and be used in industrial processes such as steel-making, etc
- The key attractive feature of using H₂ as an energy source is that its combustion does not produce greenhouse gases like CO₂ – only water
- In the absence of Government policies to reduce greenhouse emissions, H₂ only currently serves niche markets such as oil refining
- However, wide-spread international targets to meet net zero targets will require such Government policies – hence H₂ is expected to become a major part of the global energy mix in the decades to come

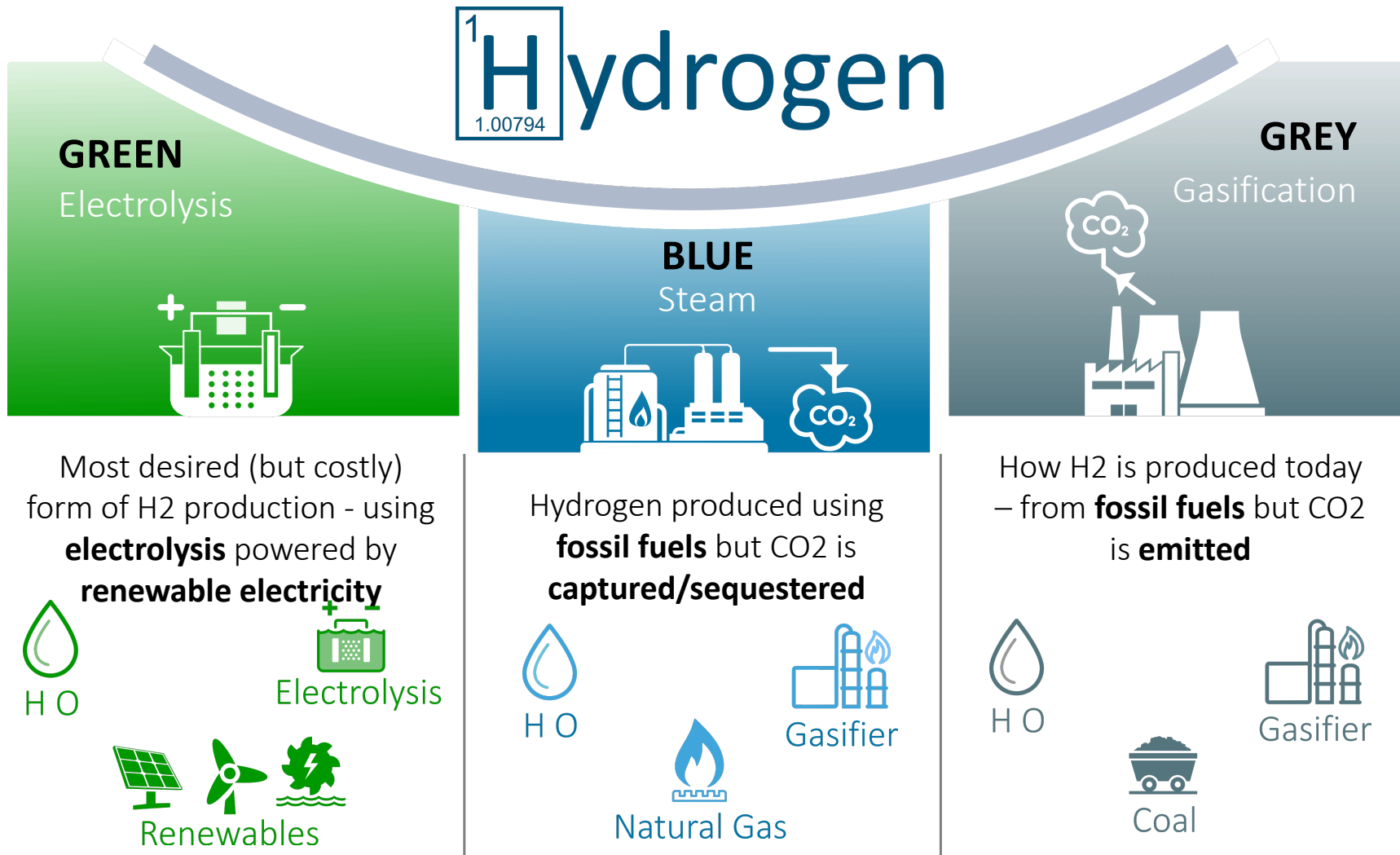


Introduction – the Colours of Hydrogen (H₂)

The 3 main ways to produce H₂ are illustrated:

- In descending current cost
- In ascending pollution levels

Net zero by 2050 targets are predicted to require massive clean H₂ production



Predicted Hydrogen Uses

Inevitable



Inner Mongolian Steel Mills are an excellent target market for Mongolian H2

Fertiliser | Food industry | Methanol | Hydrocracking | Desulphurisation

Long-haul aviation | Shipping | Steel | Chemical feedstock | Seasonal power shortage

Medium-haul aviation | Long-distance trains | e-Fuels, specialist vehicles | Local CO2 remediation

Long distance trucks & coaches | Coastal & inland vessels | High-temperature industrial heat

Short-haul aviation | local ferries | Commercial heating | Island grids | Clean power inputs

Light aviation | Rural & regional trucks | Mid/Low-temperature industrial heat | Domestic heating

Metro trains & buses | H2FC cars | Urban delivery | 2/3 –wheelers | Bulk e-Fuels | Power system balancing

Uncompetitive

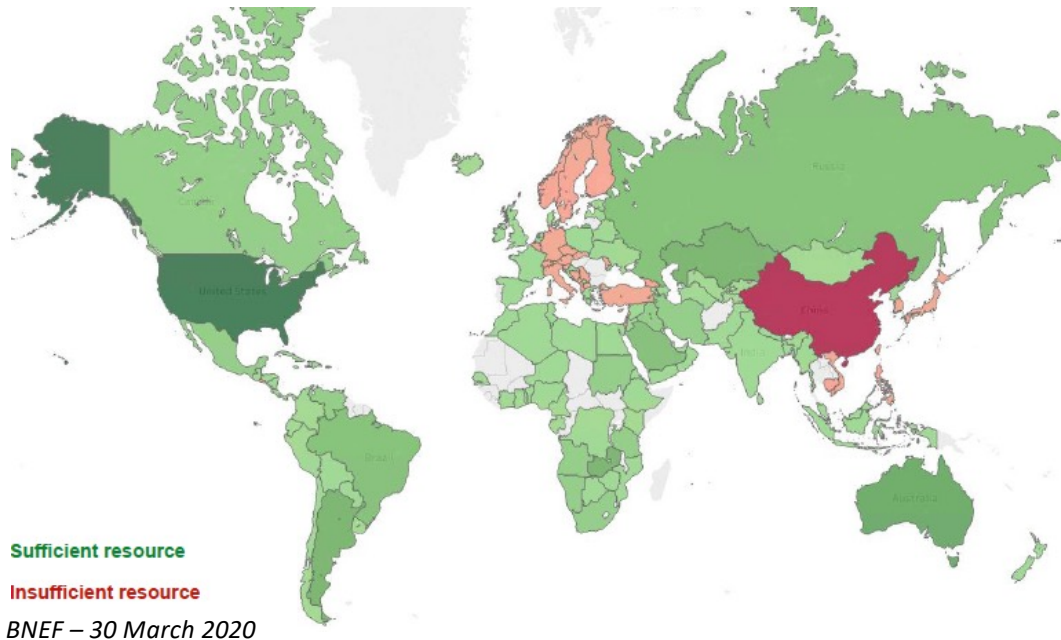
Source: Leibreich Associates



Elixir Energy

Chinese H2 Market Opportunities

- Elixir's key strategic rationale for exploring for CH₄ in Mongolia is the locational advantage that gives in supplying the World's largest energy importer to its South
- Bloomberg New Energy Finance concluded that China's population size and geographical nature means in the long term it have to import renewable energy – directly as electricity or as green H₂



Sinopec plans to spend \$4.6 bln on hydrogen energy by 2025

Reuters - 30 August 2021

PetroChina sets up \$1.5bn clean-energy investment fund

Nikkei Asia – 20 April 2021

Chinese oil giant CNOOC adds green hydrogen to energy transition plays

Globuc – 23 September 2020



Gobi H2's advantageous location

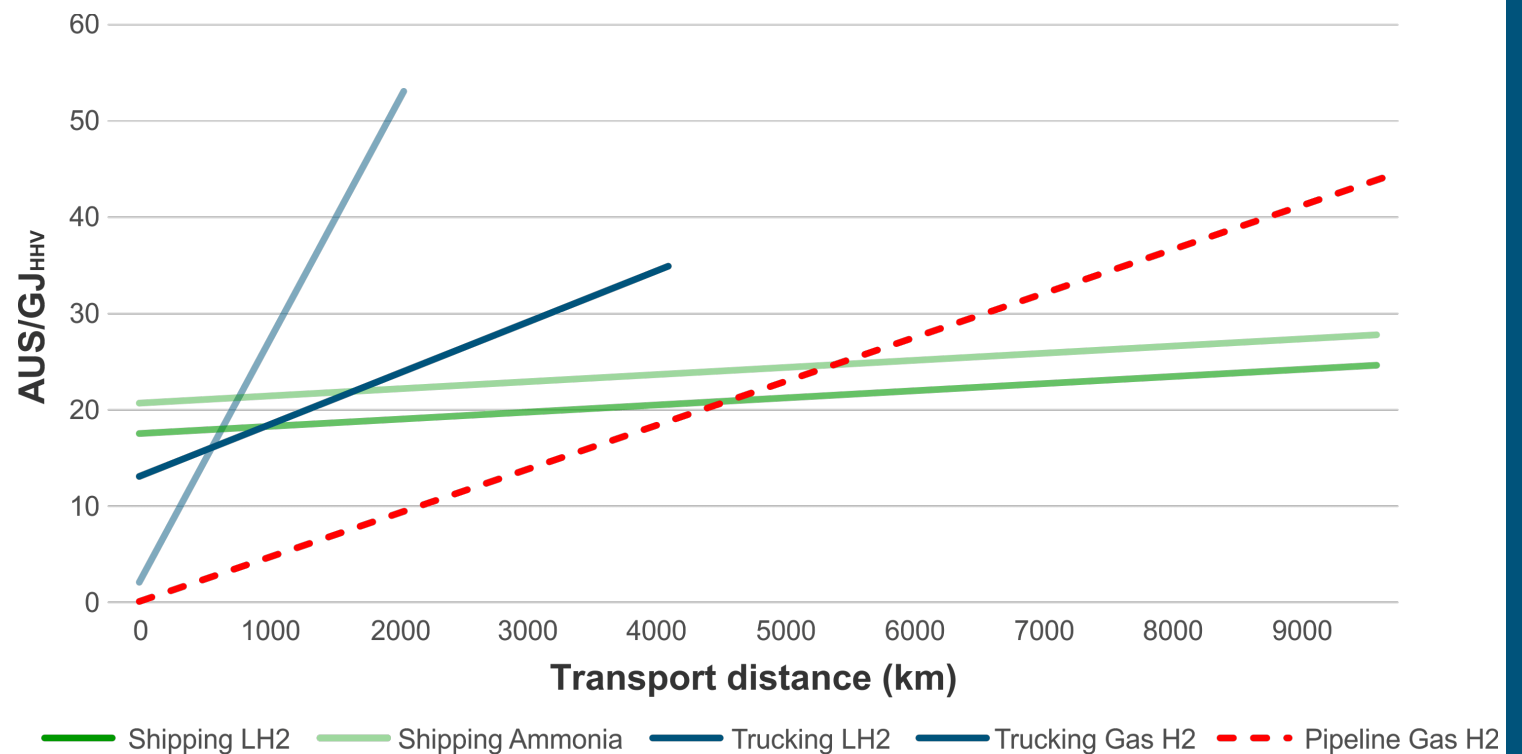


Hydrogen Delivery Costs

- Around 2/3 of the cost of producing green H₂ are the cost of renewables
- Shipping H₂ by boat costs multiples (~\$20/GJ) of shipping the same energy as CH₄ (~\$5/GJ)
- The delivered cost of H₂ is therefore all about the quality of renewable energy **and the cost of delivery**
- Access to markets by pipeline is massively advantaged over seaborne supplies – **Mongolia can supply H₂ to Chinese markets by pipeline**

Cost of gas-to-gas hydrogen transportation, including conversion and reconversion - 2030s

For hydrogen production of ~15PJ/year



Source: Rystad Energy research and analysis commissioned by Elixir Energy -



Gobi H2 Project

- Mongolia combines:
 - Exceptional renewable resources
 - A H2 market that can be reached by pipeline not boat
- These advantages make **Gobi H2** a potential Tier One globally green hydrogen export project
- Recent SB Energy MOU provides validation for the concept
- The primary goal for 2022 is to materially advance a 10 MW pilot project
- Elixir and SBE are pursuing the elements required for this under the MOU



Complementary Capabilities

- Elixir's natural gas related operations in Mongolia require:
 - Good relationships with multiple levels of Government
 - Ongoing effective engagement with different energy related Ministries and regulators
 - Ensuring local Government bodies and their communities are supported and their potential concerns addressed
- Demonstrated local support given in recent years: annual cash contributions under PSC; COVID related donations; water wells drilled; livestock feed provided; community events sponsored; local economic injections from e.g. supplies for drilling camps; etc
- The Company's existing staff, relationships, knowledge and goodwill therefore provide it with a very strong local relationship platform on which to build *Gobi H2*
- At the national level, Elixir has H2 sharing relationships with various Ministries (e.g. MOU with Ministry of Energy)



Water supplies

- Water is the key physical feedstock for green H2
- However, water costs are a trivial part of overall green H2 production costs
- The physical volumes of water required are much less than for other industrial processes already present (or planned) in the Gobi region, e.g.:
 - Gobi H2 0.5mtpa project requires $\sim 1/6$ of water currently used at Oyu Tolgoi
- Water's biggest issues are likely to be political rather than economic – community engagement is vital right from the beginning
- Elixir has engaged an experienced water drilling company who has identified locations in the South Gobi region to drill new water wells (drilling due in next few months)
- Brackish water preferred – less politically challenging than fresh water

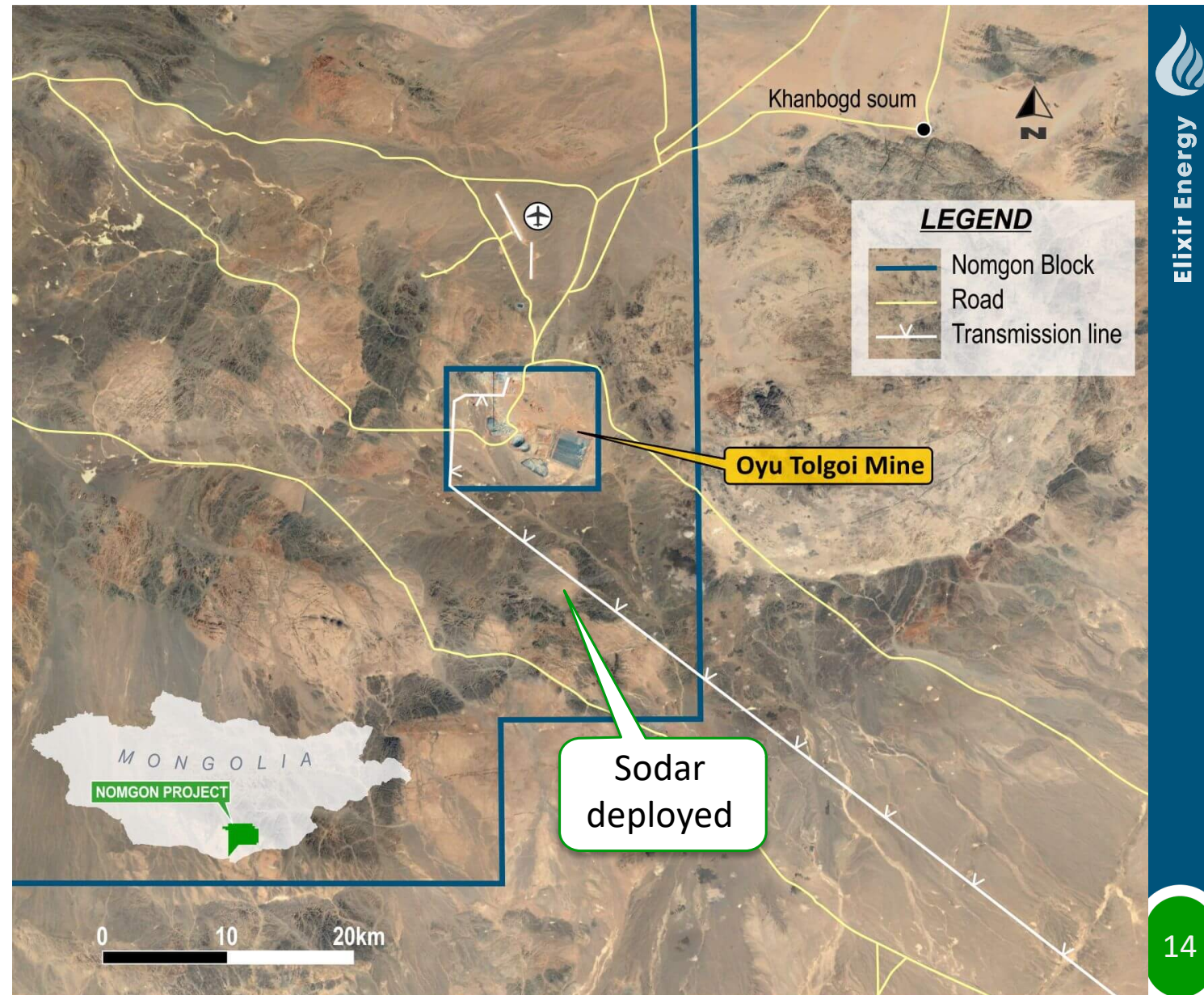


Erdenes Drilling exploring for water



Sodar

- In 2021 Elixir imported Australian built Sodar equipment into Mongolia to measure wind and solar resources to bankable standards
- The Sodar has been deployed to the South Gobi – strong wind resources measured to date (~ one year's data obtained)
- Solar equipment more recently deployed
- More SODARs recently delivered
- Locations for deployment identified by in-country renewable energy specialists



Pilot Project

- Gobi H2 will develop a pilot project in the medium term
- The pilot will serve to demonstrate viability and create confidence with multiple stakeholders: customers, policy makers, financiers, potential partners, local communities, etc
- Seaborne H2 export projects less able to demonstrate scalability in this fashion
- A notional 10 MW electrolyser pilot is proposed – using renewable electricity generated in the Gobi region
- A number of possible foundation customers are under consideration – in Mongolia and China
- Project finance to be sought – Elixir is working with the Mongolia Green Finance Corporation and briefing various Ulaanbaatar based IFIs (e.g. ADB, EBRD & IFC) with H2 related mandates



Partnering

- Elixir is a small (but nimble) ASX listed company that has been developing the *Gobi H2* project – the first of its kind in Mongolia
- Elixir recently signed a MOU with SB Energy (SBE) – a wholly owned subsidiary of Japan's SoftBank Group – under which both parties will pursue the potential development of the *Gobi H2* project
- SBE currently operates the world-class 50 MW Tsetsii wind-farm in the Gobi and this is its first green H2 venture
- SBE brings substantial attributes to the *Gobi H2* project, including strong international relationships, balance sheet and strong finance raising capabilities, high quality regional wind data, etc



Summary

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|--|--|--|---|
| 1. Most credible international energy experts now see hydrogen as playing a very large role in the future de-carbonized global energy system | 2. Hydrogen is not a fuel existing on Earth as an element – rather it must be produced from other energy sources | 3. It is therefore intrinsically more expensive than the primary energy sources it can be produced from – and its role is therefore as an <u>energy vector/carrier</u> – in time and/or space | 4. The physical nature of hydrogen means that it is very expensive to ship long distances – sources of hydrogen production adjacent to large users are therefore massively competitively advantaged |
| 5. Elixir's existing sphere of operations in Southern Mongolia is one such massively advantaged location | 6. Additionally, the quality of renewable energy resources in this region are also top tier – and in particular the wind/solar capacity factor is very high | 7. In recognition of these factors – and using the experience, personnel and skills the Company has developed over many years – Elixir is developing the Gobi H2 project | 8. A MOU between Elixir and SBE serves as a platform to rapidly progress a pilot green H2 project – then pursue gigawatt scale projects |



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