



7 April 2021

## **NOMGON GAS FIRED POWER PROJECT & INITIAL CONTINGENT RESOURCE BOOKING**

### **HIGHLIGHTS**

- Elixir announces the Nomgon gas fired power generation project
- Mongolia's Ministry of Energy has provided its support
- Clarke Energy engaged to work on a feasibility study
- Independent Contingent Resource Booking underpins gas supply to the project

Elixir Energy Limited ("Elixir" or the "Company") is pleased to announce the achievement of various milestones towards delivering Mongolia's first gas fired power project, using coal bed methane (CBM) from its 100% owned Nomgon IX CBM PSC. Critically, an independent Contingent Resources report – the Company's and the Country's first – provides growing confidence in gas supplies for the project.

Australia's own history of CBM (known as coal seam gas – CSG – in Australia) development has had very close synergies with modular gas fired power projects - that can be expanded as gas resources are proven up. Numerous projects have been built in Queensland (and even New South Wales) over the last fifteen years ago, by parties including QGC, Santos, Arrow Energy, Eastern Star Gas and Origin Energy, which facilitated their initial entry into CBM development and production.

The multiple benefits of these projects included: providing early cash-flows; utilizing raw gas that does not need processing; building confidence in gas deliverability and reserves; attracting larger energy sector partners; delivering discernible local community benefits; improving grid reliability; producing low carbon power; and; providing firm power support to the grid that facilitates the entry of more renewables.

Mongolia's Ministry of Energy is the Ministry responsible for providing support for the utilization of CBM within the following policy framework. They are charged with... *"Maintaining security, stability and efficiency in the energy sector, developing a new source of energy, regional transmission grid network support and development of innovation, coal and gas energy technologies, improving economics and financial capabilities, foreign direct investment in the sector, expansion of foreign cooperation, optimisation of sectoral and systemic structure, betterment of competitiveness of sector by developing private-public partnership."*

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Elixir is pleased to announce that it has executed a Memorandum of Understanding (MOU) with the Ministry of Energy, which provides a framework under which the parties will effectively cooperate to investigate and seek to develop a gas fired power project in the South Gobi region. Elixir expects that if a first project proves viable and goes ahead, there will be considerable further interest from the Government - and the private sector - in its expansion and/or similar projects across the very large PSC area.

Elixir is also pleased to announce that it has entered into an Agreement with Clarke Energy, a CBM to power engineering specialist company, to progress a feasibility study into this gas fired power project.

Clarke Energy is an Australian head-quartered company that is a global leader in the engineering, procurement and construction (EPC) of Jenbacher gas engine based power station projects using CBM. Clarke is a wholly owned subsidiary of the US private company KOHLER Company.

In Australia, Clarke has conducted the delivery of EPC work for over 24 separate CBM/coal mine methane based power projects, totalling around 300 MW of installed power using INNIO Jenbacher gas engines. In China, Clarke has also previously undertaken EPC work with various similar projects, totalling 61 MW.

A comparative example highly relevant to Elixir comes from the early days of Australian CBM development in 2008, when Clarke Energy constructed the Wilga Park Power Station in New South Wales. This power station was built in stages, maximising pilot CBM gas as it became available. Clarke Energy initially performed the EPC work for the first stage 3 MW plant and expanded it to 12 MW in 2011, which has since operated smoothly for 10 years. In more recent times, this power station has been further expanded to 18 MW, with the capacity and design for further growth.



*Wilga Park Power Station*

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Similar to projects like Wilga Park, Elixir plans for this initial power station project to be around 10 MW in initial size – reflecting factors such as the current local electricity transmission grid take-away capacity and an overall measured approach to what would be the a first of its kind development in the country. The project would be expandable in nature as factors such as takeaway capacity increased.

In order to, inter alia, provide confidence in gas supplies for the potential third party financiers for the project, Elixir commissioned an initial independent Contingent Resources estimate. The Contingent Resources estimate, specifically around the work undertaken to date in the Nomgon sub-basin area, was undertaken by ERC Equipoise Pte Ltd and the results are summarized in the table below. The Contingent Resources have been booked only for the initial selected gas supply area for this power project – the Western part of the Nomgon sub-basin in which the Company drilled a number of wells in 2020.

The initial 2C resources (as noted below) are more than sufficient to provide gas for the expected effective life of the power plant.

Contingent Resources (100% WI)			
Bcf	1C	2C	3C
Gas initially in place (GIIP)	13	60	242
<b>Recoverable Gas</b>	<b>5</b>	<b>24</b>	<b>104</b>

**Note:** These are unrisksed Contingent Resources that have not been risked for the Chance of Development (CoD) and thus there is no certainty that it will be economically viable to produce any portion of the Contingent Resources.

The estimation of the Contingent Resources is based on core-drilling, wireline logs and subsequent scientific analysis. Specific analysis includes Wireline Petrophysics, Coal Gas Desorption Analysis, Coal Adsorption Analysis, Injectivity Fall Off Testing, Chromatographic Gas Analysis and Coal Proximate Analysis, which have all been incorporated in the resource estimations.

The key contingency is the ability to flow gas at commercial rates, and the finalization of and financing of a development plan to feed the proposed power generation project. Elixir is planning production testing in 2021 to establish stabilized water (and potentially gas) flowrates. This will be followed in 2022 by a longer term pilot program at Nomgon. The obtained data and information will be used to finalise the Development Plan. Although the Development Plan is in its infancy at the present time, it is anticipated that an area of 13km<sup>2</sup> will be developed for the Power Project over its multi-decade life, and that the mid case number for wells could be between 36 and 107, depending of the style and type of development (for the 2C resources).

Detailed notes on the background to the preparation of the Contingent Resources report are set out in Appendix 1.

Elixir's Managing Director, Mr Neil Young, said: "Elixir's Directors have considerable experience in CBM to power projects in Australia and consider that there is an excellent fit for such projects with the stage we have now got to in Mongolia. We now look forward to working with the Mongolian Government and Clarke Energy to pursue the development of Mongolia's first gas fired power station. Our initial Contingent Resource booking – the first of its kind in the country – is focused on supplying this project. Our "rinse and repeat" model for the identification, appraisal and then production of CBM in the vast Nomgon PSC area has received major validation with this key milestone and the plan is to repeat it time and time again."



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Clarke Energy's CEO, Mr Greg Columbus, noted that *"We are pleased to be engaged by Elixir Energy to work on an initial feasibility study for the Nomgon Power Station Project. Although the first of its kind in Mongolia, it is of a type we are very familiar with over many years in Australia and in Mongolia's Southern neighbor. We have worked with a number of Elixir's Directors before in various projects and look forward to doing so again"*.

By authority of the Board:

**Neil Young** - *Managing Director*  
Elixir Energy Ltd (ABN 51 108 230 995)  
Level 3, 60 Hindmarsh Square  
Adelaide SA 5000, Australia

**For further information on Elixir Energy, please call us on +61 (8) 7079 5610, visit the Company's website at [www.elixirenergy.com.au](http://www.elixirenergy.com.au)**

### **About ERCE**

ERCE is one of the largest petroleum Reserves and Resources auditors globally. Examples of current public clients include Premier Oil, Jadestone Energy, Neptune Energy, Cairn Energy, Lundin Petroleum and IPC. The firm was formed in 2010, when ERC Energy Resource Consultants Ltd (ERC) and Equipoise Solutions Ltd (Equipoise) merged. ERCE employs geoscientists, engineers, petrophysicists and economists, and has an extensive group of senior associates who bring further regional, technical and petroleum economics expertise to projects. ERCE has offices in the UK, Singapore and Perth, Australia.

The work has been supervised by Mr Adam Becis, Principal Reservoir Engineer of ERCE's Asia Pacific office who has over 14 years of experience. He is a member of the Society of Petroleum Engineers and also a member of the Society of Petroleum Evaluation Engineers.

## APPENDIX 1

- 1. The evaluation date of the ERCE Contingent Resource Report is 6 April 2021.*
- 2. The Contingent Resources estimates have an associated Chance of Development (COD) which has not been applied to the numbers in the table above. The recoverable gas figures have not made any estimate for fuel, flare or vent.*
- 3. Elixir's working interest share of the Nomgon IX PSC is 100%. As royalties are not payable in kind in Mongolia, no netting out adjustment has been made. The Nomgon IX PSC has terms that determine Government take in various ways. At this stage of the asset life it is not possible to determine the level of that take given significant uncertainty over possible gas prices, development and operating costs and type curves. Elixir considers it therefore more appropriate to report Contingent Resources on a working interest basis.*
- 4. The Contingent Resources are considered to be in the "development unclarified" category as defined by the 2018 PRMS SPE-PRMS standards.*
- 5. Contingent Resource assessments in this release were estimated using probabilistic methods in accordance with 2018 PRMS SPE-PRMS standards. The data used to compile the independent Contingent Resources report includes gravity and magnetic data, detailed field mapping, and detailed geological interpretation of seismic, well and core data within the PSC. ERCE has used standard petroleum evaluation techniques in the preparation of this report. These techniques combine geophysical and geological knowledge with assessments of porosity and permeability distributions, fluid characteristics and reservoir pressure. There is uncertainty in the measurement and interpretation of basic data. ERCE has estimated the degree of this uncertainty and determined the range of petroleum initially in place and recoverable hydrocarbons. The accuracy of estimates of volumes of gas is a function of the quality and quantity of available data and of interpretation and judgment. While the estimates of Contingent Resources presented herein are considered reasonable, these estimates should be accepted with the understanding that reservoir performance subsequent to the date of the estimate may justify revision, either upward or downward.*
- 6. This document contains forward looking statements that are subject to risk factors associated with the oil and gas industry. It is believed that the expectations reflected in these statements are reasonable, but they and or their timing may be affected by many variables which could cause actual results or trends to differ materially. The technical information provided has been reviewed by Mr Gregory Channon, Technical Advisor of Elixir Energy Limited. Mr Channon is a qualified geologist with over 30 years technical, commercial and management experience in exploration for, and appraisal and development of, oil and gas. Mr Channon is a member of the American Association of Petroleum Geologists and consents to the inclusion of the information in the form and context in which it appears.*