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Strategic Alliance with Helium Offtake Partner

- **Strategic Alliance with Paradox Resources LLC to pursue several advanced opportunities to optimize and prioritize near-term exposure to the burgeoning helium market**
- **Red Helium Project to be a potential priority supplier to re-start the Paradox liquefier (current helium production derived from the purifier train only) – capable of producing high purity 99.9995% helium - which attracts premium pricing, currently over US$1,000/mcf[2]**
- **Collaborative downstream marketing targeting end users of high-purity helium such as semi-conductor manufacturers and the space industry**
- **Strategic Alliance to progress identified CO_2 disposal options:**
  - **i) Investigation into the expansion of existing carbon sequestration activities at Paradox's Lisbon Plant to include CO_2 from the Red Helium Project - potentially revenue-generating under Section 45Q of the US Tax Code; and**
  - **ii) Joint investigation into utilization of Red Helium Project CO_2 for enhanced oil recovery (flooding) from Paradox's Lisbon Oil Field**

Grand Gulf Energy Ltd (**ASX:GGE**) (**"Grand Gulf" or the "Company"**), through its majority-owned incorporated JV company Valence Resources LLC (Valence), has entered into a Strategic Alliance (Alliance) with helium refiner and seller Paradox Resources LLC (Paradox), owners of the advanced Lisbon Valley Helium Plant located 20 miles north of the Red Helium Project.

The Alliance, designed to fast-track and optimise the significant commercial opportunities that exist in the current buoyant helium market, comes on the back of the recent execution of a Gas Sales & Processing Agreement ('GSPA' or 'offtake')[1] with Paradox, which provides Grand Gulf with a path to monetisation, with minimal CAPEX / time delay, for the Company's maiden pure-play helium well, Jesse#1.

The Strategic Alliance incorporates a number of key items summarised below and detailed in Table 1, which the parties have agreed to work collaboratively in respect of to progress and, if warranted, to enter into separate binding arrangements in respect of.

<u>**Restart of Paradox Resources' Helium Liquefier**</u>

The advanced Lisbon helium processing plant has both a Liquefaction Plant and a Purification Plant. The Purification Plant produces 99.9989% helium purity gas whilst the Liquefaction Plant produces a superior 99.9995% helium purity product that commands premium pricing, with the company advised of recent US spot market prices over US$1,000/mcf[2].

Due to a lack of raw helium supply, Paradox has been unable to restart the Liquefaction Plant; a discovery at the Red Helium Project will assist in providing the requisite/minimum volumes for the Liquefaction Plant to be restarted with helium from the Red Helium Project prioritised.

[1] ASX announcement 15 March 2022.

[2] Cliff Cain, CEO Edelgas Group, US spot market research grade helium (160mcf tube trailer)

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Collaborative Marketing to High Purity End Users
To optimise value received for premium helium, Valence and Paradox have agreed to jointly identify and market helium to high-purity helium end-users in the semiconductor, medical, research, space and defence industries.

Expansion of Existing Offtake and Commercial Alignment
Expansion of the terms of the recently executed Gas Sales & Processing Agreement by including the processing of gas supplied by any successful helium wells subsequent to Jesse#1.

The parties recognise that there are potential synergistic commercial benefits in assessing corporate opportunities that involve both Paradox assets and the Red Helium Project and have agreed to jointly pursue such opportunities.

Options for CO_2 Disposal - Enhanced Oil Recovery and Carbon Sequestration
The Strategic Alliance explores several pathways to dispose of, and derive revenue from, the Red Helium residual gas stream (primarily carbon dioxide and nitrogen) including enhanced oil recovery at Paradox-owned oil fields and carbon sequestration (with potential revenue from the US Government under 45Q of the US Tax Code) together with other storage/disposal options.

The Lisbon Valley Gas and Helium Plant is currently sequestering CO_2 and is well advanced in the permitting process to qualify for carbon capture tax credits under Section 45Q. The current understanding and legislation in the United States values the tax credits at $50 per metric tonne (mt) of CO_2 for sequestration and $35/mt for CO_2 permanently stored in enhanced oil recovery processes by 2026.[3]

The Strategic Alliance includes a jointly funded US$75,000 carbon dioxide enhanced oil recovery feasibility study on Paradox Resources' Lisbon hydrocarbon field. The Strategic Alliance is structured to explore mutually commercially advantageous revenue sharing arrangements, but the company has been advised CO_2 is selling for approximately US$1.5/mcf for similar projects in the area.

Appointment of Strategic Alliance Consultant
The company has engaged a specialist helium consultant with considerable experience in helium processing, sales and marketing to facilitate and drive the Strategic Alliance. 13.5 million GGE shares will be issued as payment for the consulting services.

Helium Market – Brief Update
Ongoing supply-side issues including the outage at the US government's BLM Cliffside facility (10% global supply) and the Amur facility incident (10 - 20% global supply) have put extreme pressure on the global market, and in particular the US spot market, with the company advised of US spot prices in excess of US$1,000/mcf for research grade helium (160mcf tube trailer)[2]. Retail prices have increased more than 200% in the UK, and many suppliers in the US are now in Force Majeure[4].

[3] https://sgp.fas.org/crs/misc/IF11455.pdf
[4] AKAP energy https://www.akapenergy.com/post/retail-helium-prices-in-uk-up-200-since-august-2020, https://www.gasworld.com/helium-markets-now-experiencing-helium-shortage-40/2022650.article

Managing Director Dane Lance commented:

"The Strategic Alliance with helium offtake partner Paradox Resources is a huge step for the Company as it becomes the potential priority raw gas helium supplier to the all-important high-purity helium market that currently commands prices of around US$1,000/mcf.

The Company will also partner with helium plant owner Paradox Resources in marketing to high-tech end users such as semi-conductor manufacturers and the space industry as well as exploring any collective corporate transactions/opportunities.

The Strategic Alliance has already identified two potentially revenue-generating CO_2 disposal options, both of which will be more fully developed in the short term."

Figure 1 – Lisbon Valley Gas Plant

About Paradox Resources LLC:

Headquartered in Houston, Texas, Paradox Resources is a privately held, return driven, independent energy company engaged in the exploration, development, production, acquisition, transportation and processing of oil, natural gas and helium resources in the United States, with primary assets within the Paradox Basin of Utah and Colorado.

Paradox is operator of 570 miles of operated gas gathering lines (220 miles of which is wholly owned) with four compression stations that feed directly to the Paradox owned Lisbon Valley Gas Plant (Lisbon) comprised of:

- *60 million cubic feet per day (mmcfd) treating plant and 45 mmcfd cryogenic plant*
- *Purified gaseous ~99.989% helium capacity of 0.5 mmcfd*
- *High purity 99.9995% helium liquefaction capacity of 0.6 mmcfd*

For more information see: http://www.paradoxresources.com

Table 1: Strategic Alliance key terms, objectives and description

The objectives of the strategic alliance between the parties is:

a) to co-operate with each other on the matters detailed below;
b) to conduct such studies and assessments as the parties determine appropriate to assist with decision making of the parties on the matters contemplated below; and
c) if determined appropriate by each party, to negotiate formal agreements in good faith in respect of any matter contemplated below the parties determine appropriate.

Item	Objective	Description
1. In the event of drill success from Jesse#1 well, helium feed from the Red Helium Project could be prioritised for the recommencement of production from the high purity helium Paradox Liquefaction Plant which produces 99.9995% helium purity.	Exposure of both Valence and Paradox to the lucrative high purity helium product generated by the liquefaction plant attracts premium pricing.	The advanced Lisbon helium processing plant has both a Liquefaction Plant and a Purification Plant. The Purification Plant produces 99.9989% helium purity gas whilst the Liquefaction Plant produces a superior 99.9995% helium purity product that commands premium pricing. Due to a lack of raw helium supply, Paradox has been unable to restart the Liquefaction Plant; a potential discovery at the Red Helium Project would enable the Liquefaction Plant to be restarted with helium from the Red Helium Project prioritised.
2. Identification and approach to high-end tech users of high-purity helium	Valence and Paradox to identify and market high-purity helium to the semiconductor, medical, research, space and defence industries.	The high purity helium produced by the Liquefaction Plant attracts premium pricing, with users further valuing long term stable supply contracts, and potential end users such as Taiwanese Semiconductor Manufacturing Corporation (TSMC) (market cap US$550B)[5] have been identified. A major semiconductor fabrication hub is being expanded in Phoenix, Arizona, (TSMC $12b, Intel $20b)[6], proximal to the Four Corners area.
3. Assessment of CO_2 sequestration to derive additional revenue	Assessment of Red Helium Project - under Section 45Q of the US Tax Code, qualifying CO_2 sequestration projects are eligible for tax credits (revenue)	The Red Helium Project is a pure helium play, meaning that the helium is not associated with methane gas (hydrocarbons). The raw gas stream modelled (from the nearby Doe Canyon analogue field) from the Red Helium Project is dominated by CO_2. Preliminary indications are that CO_2 derived from the Red Helium Project could potentially qualify for tax credits under Section 45Q. It is noted that Paradox currently is currently sequestering CO_2.

5 29 March 2022 https://www.nasdaq.com/market-activity/stocks/tsm

6 https://www.cnbc.com/2021/06/04/why-intel-tsmc-are-building-water-dependent-chip-plants-in-arizona.html

Item	Objective	Description
4. Assessment of CO_2 Enhanced Oil Recovery and Storage	Assessment of using existing Paradox-controlled hydrocarbon field(s) for CO_2 enhanced oil recovery and storage / disposal - jointly funded US$75,000 study.	Paradox controls several hydrocarbon fields that would potentially benefit from enhanced oil recovery using CO_2 injection. The Lisbon Field will be the first field assessed.
5. Expansion of the existing Gas Sales & Processing Agreement (GSPA)	Expanding the terms of the GSPA by including the processing of gas supplied by any successful helium wells subsequent to Jesse#1.	Paradox seeking to lock in long term consistent helium supply in order to negotiate premium long-term contracts.
6. Corporate Opportunities	Paradox and Grand Gulf (Valence) agree to work together to identify and consider appropriate corporate opportunities	The parties recognise that there are potential synergistic commercial benefits in assessing corporate opportunities that involve both Paradox assets and the Red Helium Project. Such opportunities may include the contemporaneous sale of the Paradox assets and Red Helium Project, a merger of Paradox and Grand Gulf Energy Limited (the controlling entity of Valence), a simultaneous investment by a strategic investor into both Paradox and Valence/Grand Gulf Energy.

This ASX announcement has been authorised for release by the Board of Grand Gulf Energy Ltd.

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GRANDGULF ENERGY LIMITED

About Grand Gulf Energy:

Grand Gulf Energy Ltd (ASX:GGE) is an independent exploration and production company, headquartered in Australia, with operations and exploration in North America. The Red Helium project represents a strategic pivot to a pureplay helium exploration project, located in Paradox Basin, Utah, in the prolific Four Corners region. For further information please visit the Company's website at www.grandgulfenergy.com

Forward Looking Statements:

This release may contain forward-looking statements. These statements relate to the Company's expectations, beliefs, intentions or strategies regarding the future. These statements can be identified by the use of words like "anticipate", "believe", "intend", "estimate", "expect", "may", "plan", "project", "will", "should", "seek" and similar words or expressions containing same. These forward-looking statements reflect the Company's views and assumptions with respect to future events as of the date of this release and are subject to a variety of unpredictable risks, uncertainties, and other unknowns. Actual and future results and trends could differ materially from those set forth in such statements due to various factors, many of which are beyond our ability to control or predict. These include, but are not limited to, risks or uncertainties associated with the discovery and development of oil, natural gas and helium reserves, cash flows and liquidity, business and financial strategy, budget, projections and operating results, oil and natural gas prices, amount, nature and timing of capital expenditures, including future development costs, availability and terms of capital and general economic and business conditions. Given these uncertainties, no one should place undue reliance on any forward-looking statements attributable to GGE, or any of its affiliates or persons acting on its behalf. Although every effort has been made to ensure this release sets forth a fair and accurate view, we do not undertake any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.