



RENERGEN LIMITED

Helium Resource Update Shows Renergen's Huge Potential

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Prospective Helium Resource – Huge Potential to ‘Join the Big Boys’

Reenergen continues to make significant steps towards increasing the value of the Virginia Gas Project and has announced a Prospective Helium Resource. The resource shows the huge potential of the project and demonstrates that Reenergen is rapidly moving towards being ‘one of the big boys’ in the helium space.

What is a Prospective Resource?

Reserves and resources indicate the estimated quantities of potentially recoverable helium. Prospective Resources are estimates of gross recoverable helium volumes which are undiscovered, but for which the likelihood of their existence can be estimated.

The Prospective Resources have been evaluated by independent, accredited reserves and resources engineers.

How Big Is the Prospective Resource? ... It’s Big!

The least conservative (3U) estimate of the Prospective Helium Resource is 344 billion cubic feet (bcf), taking Reenergen’s total helium reserves and resources position to 371bcf. To put this into perspective, the world’s largest supplier of helium, the USA, has a total reserves and resources position for the entire country of approximately 750bcf. Reenergen’s position for their single project is just shy of half the size of the entire USA’s comparable reserves and resources position.

Why is Reenergen’s Resource Different to the Others?

All global helium production is as a by-product of gas. The difference for Reenergen is the concentration of helium in its gas. Reenergen’s helium has an average concentration of around 3% and has had hits as high as 12%. This compares with the average concentration in Qatar at 0.04%, Russia at 0.06% and the USA at 0.35%. As a result, Reenergen’s helium is commercial at much smaller scale than existing helium production.

Valuation – Base Case A\$2.12 – Potential A\$5.00 Valuation from Conversion of Prospective Resources to Reserves

Our base-case NPV valuation for Reenergen is **A\$2.12/ZAR21.17**. This valuation does not include the material potential upside from the Prospective Resources being further appraised and potentially converted to reserves. We have looked at a scenario of doubling current forecast production for Stage 2 and extending the project’s life by 30 years. This scenario suggests a valuation of A\$5.00/ZAR50.00.



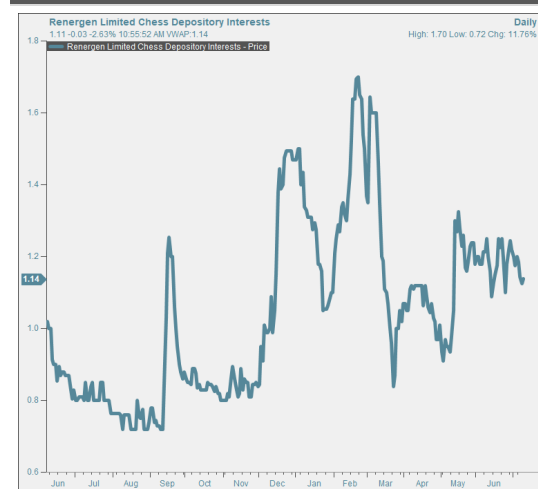
Reenergen is an emerging producer of LNG and helium. The principal asset is a 100% shareholding in Tetra4, the first and only onshore petroleum production right in South Africa.

| | |
|-----------------------------|---------------------|
| Stock | RLT.AX/REN.JSE |
| Price (10 July) | A\$1.10 / ZAR 14.84 |
| Market cap (10 July) | A\$149m |

| Company data | |
|------------------------------|----------|
| Net debt (ZAR) (31 May 2020) | 267.8m |
| Shares on issue | 118.235m |
| Code ASX | RLT |
| Code JSE | REN |
| Primary exchange | JSE |

| Next steps | |
|--|-----------|
| Drill inclined wells to increase flow | Q3 CY2020 |
| High concentration helium further drilling | Q4 CY2020 |
| Drill and complete production wells | H2 CY2020 |

RLT Share Price Since ASX Listing 7 June 2019



The Prospective Resources – The Details

Specialists Assessed Prospective Resources in Three Reports

Renegen's helium deposit is the highest-concentration deposit in the world. This deposit is significantly different from others globally due to 'the Vredefort impact': a meteor strike which occurred around 2 billion years ago, resulting in the largest-known crater globally in what is now South Africa. This impact resulted in a complete change of the landscape and ultimately trapped the helium.

Renegen engaged three specialists to assess the Virginia Gas Project's Prospective Resources. The resulting reports were prepared for Renegen to further develop an understanding of the origins of helium discovered in the area and to assist in planning for the Phase 2 expansion of the gas project. Renegen is commencing drilling a series of inclined wells to further appraise the full extent of the opportunity and the economic recoverability of the project.

Report #1: Shango Solutions – Geological Consultants

Focus area: Assessing the high-concentration uranium and thorium deposits. Helium production in the Earth's crust is primarily controlled by the radioactive decay of certain isotopes of uranium and thorium. Shango quantified the tonnage of high-concentration uranium and thorium deposits within the Production Right area, as well as their age and structural configuration. This assessment was based on an extensive database of drill intersections and other information from the area's long history of exploration for, and production of, valuable minerals (particularly gold, platinum and diamonds). The helium is held in a reservoir fracture network that Shango has extensively mapped.

Report #2: Edinburgh University – Geoscience and Geochemistry Academics

Focus area: Evaluating the project's helium-generation potential. The Edinburgh report, based on the Shango Solutions reports, is a thorough evaluation of the helium-generation potential within the bounds of the Virginia Gas Development Project. The Edinburgh report estimates helium generation historically, based on uranium and thorium concentrations, mass, and estimated age of the principal source rocks in the Virginia Gas Project.

Report #3: Sproule – Certified Petroleum Geologists and Reservoir Engineers

Focus area: Estimating Prospective Helium Resources. Sproule used the Edinburgh report to estimate Prospective Helium Resources under petroleum estimate standards acceptable to the JSE and ASX. Previously Sproule had evaluated the methane and helium reserves and resources for Renegen in 2018 and 2019. Sproule evaluated the volumes of helium using a probabilistic methodology. Technically recoverable helium resources were calculated as the product of:

- the range of volumes of helium generated as discussed in the Edinburgh report;
- migration/entrapment factors to describe captured helium yet remaining in the project; and
- recovery factors which represent the fraction of trapped helium which can be recovered using current technology with no consideration of price.

Understanding the Numbers: How Total Resources Are Categorised

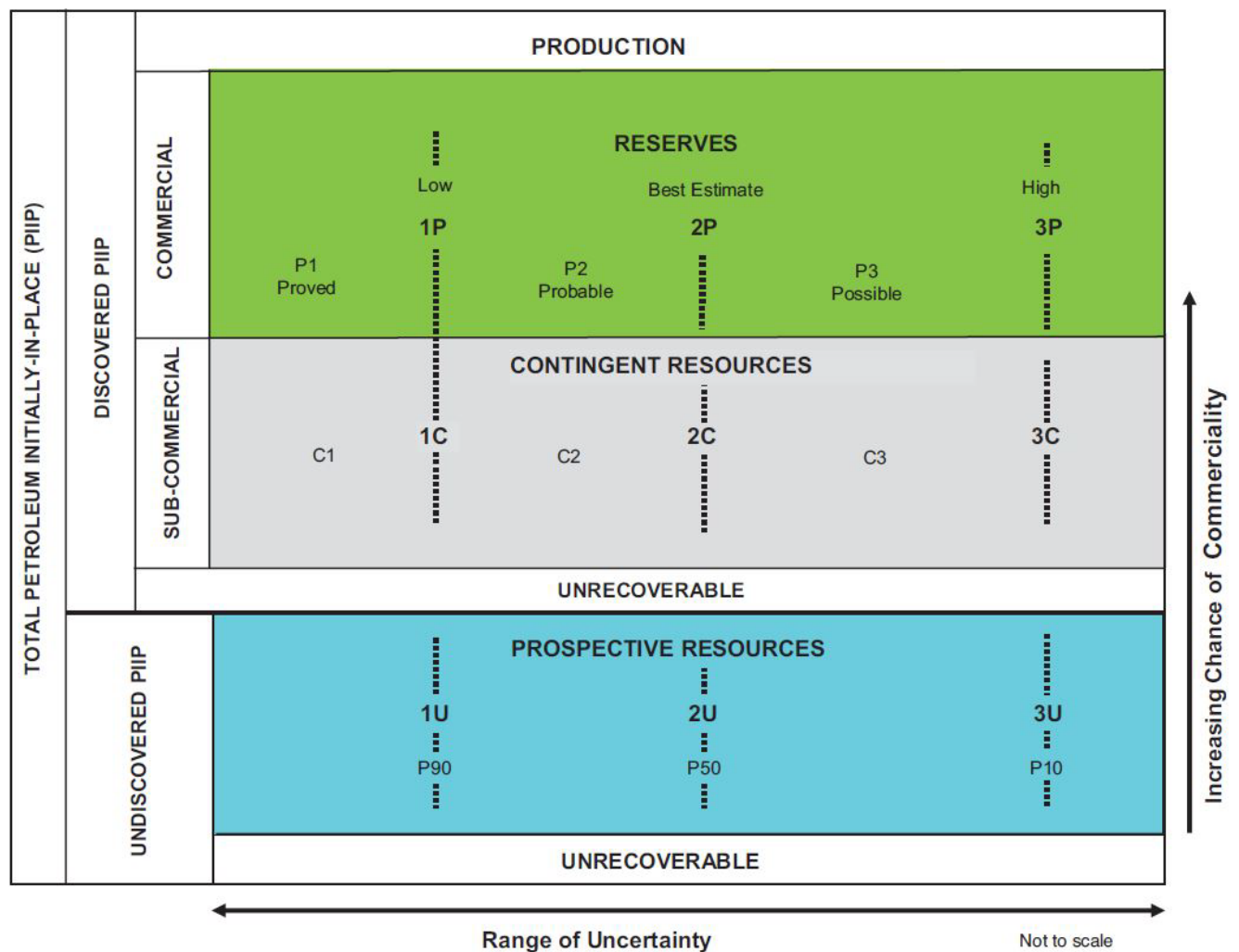
Estimated quantities of potentially recoverable helium can be placed into three categories. In order of increasing certainty, they are Prospective Resources, Contingent Resources and Reserves.

Prospective Resources are those quantities of helium estimated, as of a given date, to be **potentially recoverable** from **undiscovered accumulations** by application of **future projects**.

Contingent Resources are those quantities of helium estimated, as of a given date, to be **potentially recoverable** from **known** accumulations but where the applied project(s) are **not yet considered mature enough for commercial development due to one or more contingencies**.

Reserves are those quantities of helium anticipated to be **commercially recoverable** by **application of development projects to known accumulations**. The categories within Reserves, in decreasing certainty, are Proved, Probable and Possible.

Exhibit 1 – Classification of Petroleum (Including Helium) Reserves and Resources



Source: Sproule (Renergen Prospectus)

Assessing the Numbers: Prospective Resources Are Huge on Global Comparisons

Breaking down Renergen's substantial announced Prospective Resources

Exhibits 2-4 detail the Prospective Resources, Contingent Resources, and Current Reserves, respectively.

Exhibit 2 – Renergen Helium Prospective Resources*

| | Helium (bcf) |
|----|--------------|
| 1U | 32.52 |
| 2U | 106.00 |
| 3U | 344.00 |

Source: Sproule

*1U volume of Prospective Resources represents the volume with a 90% chance of being recovered or exceeded, the P90 confidence level. Similarly, the 2U volume corresponds to the median recovery, the P50 case. The 3U category has the largest volume, representing the estimated amount that would be captured at a 10% confidence level: the least conservative P10 case. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to estimate the existence of a commercial quantity of potentially movable helium.

Exhibit 3 – Renergen Helium Contingent Resources

| | Helium (bcf) |
|----|--------------|
| 1C | 7.95 |
| 2C | 14.41 |
| 3C | 20.89 |

Source: Sproule

Exhibit 4 – Renergen Helium Reserves

| | Helium (bcf) |
|----|--------------|
| 1P | 1.01 |
| 2P | 3.41 |
| 3P | 6.86 |

Source: Sproule

3U Prospective Resources of 344Bcf – world-class size

Renergen's 3U Prospective Resources are large. While 3U represents the resource estimate with the lowest confidence level, it can be compared to other large helium deposits around the world in order to gain perspective of the Virginia Gas Project's potential size.

There is no clear picture of global helium reserves/resources and relatively little written publicly. However, the United States Geological Survey (USGS) performed a national and global helium gas assessment over the period 2013 - 2016 and estimated helium reserves and resources. We use this information to compare the largest helium reserves and resources with the Renergen's Prospective Resources.

Mega LNG producers' helium reserves and resources – minute concentrations of helium but commercial at scale

Qatar and Russia possess some of the largest gas reserves in the world and are the home of mega Liquefied Natural Gas (LNG) projects. Qatar was the largest exporter of LNG in 2019, exporting 3,860bcf. Russia exported 1,420bcf of LNG, making it the world's fourth-largest LNG exporter.

Notably, according to the USGS, Qatar and Russia have helium concentrations in minute proportions within their gas reserves. Qatar's level of helium within its gas reserves is reported as 0.04% while Russia's is 0.06%. This is compared to Renergen's average helium concentration of 3%.

Helium has largely been a profitable by-product of LNG production, but not valuable enough to justify standalone developments. The scale at which Qatar and Russia produce LNG has allowed them to make the helium commercial.

Development of helium is hugely dependent on the development of the gases that it exists alongside. Low gas prices will lead to gas projects being deferred or cancelled, therefore preventing the production of helium.

The USA – world's largest producer of helium

The USA has the largest reserves and resources of helium in the world and has historically been the largest supplier of helium to the global market. The depletion of the country's strategic reserve of helium has significantly affected supply, but the US continues to be a major supplier through the Hugoton and LaBarge gas fields and through CO₂ production. The estimated concentration of helium in USA reserves and resources is 0.35%.

In the US, the shale producers do not produce helium as shale does not trap helium, even if there is any in the reserve. Thus, helium development in the US may have to be driven by helium economics, necessitating higher helium prices to incentivise investment.

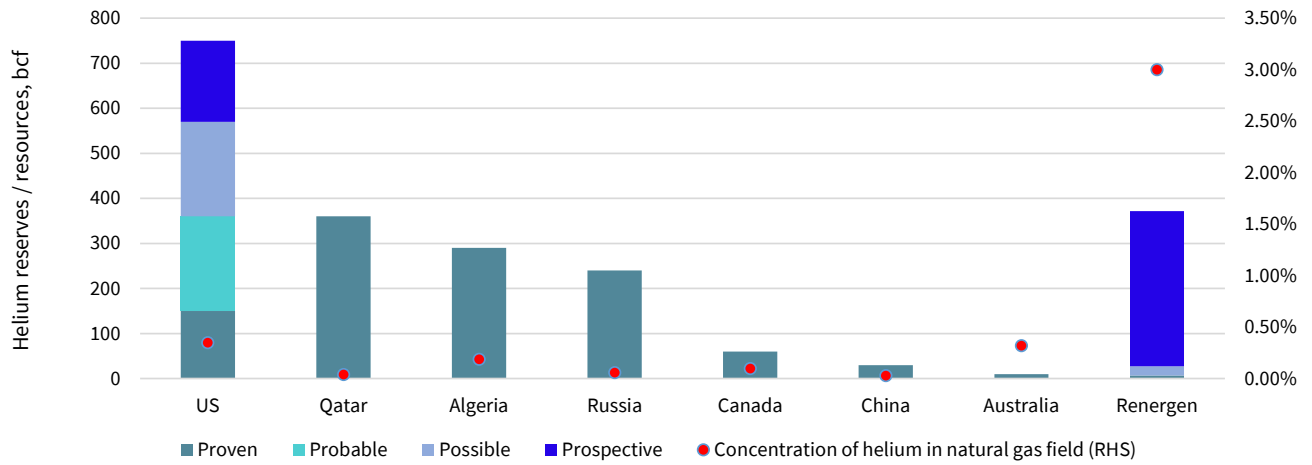
Global helium reserve and resources estimates

The reserves described here are shown as 'proven' as they are estimated as a percentage of Proven Gas Reserves. They may not be developed if the gas that contains the helium is not developed.

Exhibit 5 shows global reserves and resources estimates from the USGS, clearly demonstrating the significance of Renergen's Prospective Resources. The key comparable is the USA, the leading global supplier. The USA's total reserves and resources are around 750Bcf, only roughly double Renergen's total reserves and resources of 371Bcf.

Renergen's reserves and resources of 371Bcf compare to estimated reserves for Qatar of 360Bcf and Russia's 240Bcf, once again demonstrating the significance of Renergen's helium deposit.

Exhibit 5 – Global Helium Reserve and Resource Estimates



Sources: USGS, Renergen Prospectus, Sproule.

Global Helium Market – Positive Pricing Environment Expected

The helium market has continued to be extremely tight and remains very sensitive to any disruption in supply. New supply is on its way from Qatar and Russia, predominantly as a by-product from mega LNG plants. However, these have been plagued by delays and are in politically sensitive regions.

At the same time, the COVID-19 pandemic has created additional demand for helium, which is needed for a breathing gas (Heliox) used in ventilators treating COVID patients. Heliox is composed of a mixture of helium and oxygen and is a medical treatment for patients with difficulty breathing. The mixture generates less resistance than atmospheric air when passing through the airways of the lungs, and thus requires less effort by a patient to breathe in and out.

Renergen’s supply will certainly help the situation, but we do not expect Stage 2 until 2023. The major risk to helium demand is the recycling, reuse and refining of its use by customers. Renergen supplies purely liquid helium and the mentioned threats to demand effect the gaseous helium market more than the liquid market.

A Quick Update on Renergen’s Overall Progress

Drilling of Inclined Wells

The faults and fissures containing gas and helium in the Virginia Gas Project area are mostly sub-vertical, and drilling inclined wells will maximise the probability of intersecting these faults and fissures. Successful intersection of multiple faults and fissures will significantly increase flowrates for the gas and helium.

On Renergen’s current projections, the first well is expected to spud late in July and reach the primary target formation late in August. The company is focussed on a successful well over a fast well.

This is Renergen’s first inclined well and the company is taking all steps to maximise the probability of success. A successful first well will enable a roadmap for future drilling and rapid ramping up towards production.

Anticipated First LNG Production in Q3 2021

Renergen now anticipates first LNG production in Q3 2021. This is slightly later than the company previously indicated, primarily due to COVID-19–related issues. The production commencement is in line with MST’s estimates.

Valuation – Potential Upside from Using More (But Not All) of the Resource

Base-Case NPV Valuation – Stage 2 the Key

Our base-case valuation for Renegen is A\$2.12/ZAR21.17. We have applied a 12.5% discount rate, and a 22-year life for the project (the remaining life of the production licence until 2042). Our base-case valuation includes both a Stage 1 and Stage 2 development, utilising only current 2P reserves and does not reflect any value for the Prospective Resources. As the Prospective Resources are further drilled and appraised, they can be upgraded to Contingent Resources and then through to reserves.

Our current valuation includes a Stage 2 production of approximately 3bcf of gas per annum and 0.12bcf of helium per annum and runs until the expiry of the current mining licence in 2042.

Scenario Analysis – Doubling Current Stage 2 Production and Increasing Project Life

Assuming that the Prospective Resources could be partially converted into reserves, the project's production could comfortably double, and its life could extend by 30 years (Renegen has an option to extend the licence by 30 years).

An increase in reserves gives the company several options:

- increase the capacity of the project and produce at a higher annual rate
- increase the life of the project
- increase both capacity and life.

Exhibit 6 shows a scenario analysis of potential valuations under the assumption of doubling our current forecast production and extending the project's life by 30 years. In doubling production, we have simply doubled the capital cost involved.

By doubling the production and extending life 30 years, we obtain a valuation of A\$5.00 per share. Under this scenario, the following reserves and resources are used:

- the current 3P reserve of gas
- the current 3P reserve of helium
- 25% of 1C Contingent Resources of helium.

This scenario still leaves substantial further upside from the Prospective Resources.

Exhibit 6 – Scenario Analysis - Valuation A\$ Per Share– Increase Production and/or Extend Project Life

| | Current Production | Double Production |
|-----------------------|--------------------|-------------------|
| Maintain Current Life | A\$2.12 | A\$3.66 |
| Extend Life 30 years | A\$2.21 | A\$5.00 |

Source: MST estimates.

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