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Energy

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GEORGINA
ENERGY PLC

Major Shareholders

Westmarket Corporation Pty Ltd.

Primary Index LSE

Next Key Announcement IPO 10/2019

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Georgina Energy filling the gap left by federal helium

An IPO opportunity in the helium space

Georgina Energy is an energy company offering investors exposure to an increasingly supply-constrained commodity - helium.

The company is in the process of acquiring the licence on a major project in the Northern Territory, Australia, with substantial helium potential. The company will seek to raise up to £10mln via an LSE Main Market listing in autumn 2019, with the proceeds to be used to complete the licence acquisition and to begin developing the project. We expect the publication of the initial public offering (IPO) prospectus within the coming weeks.

In our detailed initiation report – “Georgina Energy; upcoming IPO”, 09 September 2019 – we examined the helium market drivers and the details of the EP127 Georgina Project. In this update, we provide some additional details on the supply and demand dynamics of the helium market.

The drivers of the helium market

Helium is an important industrial gas with applications in medical, industrial and technology industries (details on p2). There is a limited global supply of helium, with growing demand and no direct substitute available. The critical importance of helium has led to the US government placing restrictions on exports. Furthermore, the American Medical Association has called for restrictions even on domestic use, to prioritise medical applications. The tightness of supply and growth in demand have led to a 324% rise in the helium price over the last 10 years (Bureau of Land Management data).

Supply constraint

Major sources of helium globally (more detail p2) include the Federal Helium Reserve (FHR) in Texas. The FHR has held annual auctions over the last five years that have provided a global pricing benchmark for helium. This auction has been discontinued and will not take place this year, with the expectation that private sales from the FHR will fully exhaust its helium assets in the next two years. The absence of an auction means that there is no pricing benchmark, but we believe that the FHR's exit from the market could potentially spark an upward squeeze in private selling prices globally.

Demand drivers

Major demand drivers (details p2/3) include MRI machines for medical diagnostics, applications in electronics manufacture, and various industrial uses for helium. In this report, we provide a snapshot of one particular segment within the industrial helium market – aerospace and space technology. We note the recent news that Reaction Engines will be progressing its project to produce a high-speed aircraft propulsion system using advanced super-cooling systems based on helium.

Overall, we believe that the combination of acute supply constraint and growth in demand for helium provides a favourable market environment for Georgina Energy's helium extraction project, and for the company's IPO.

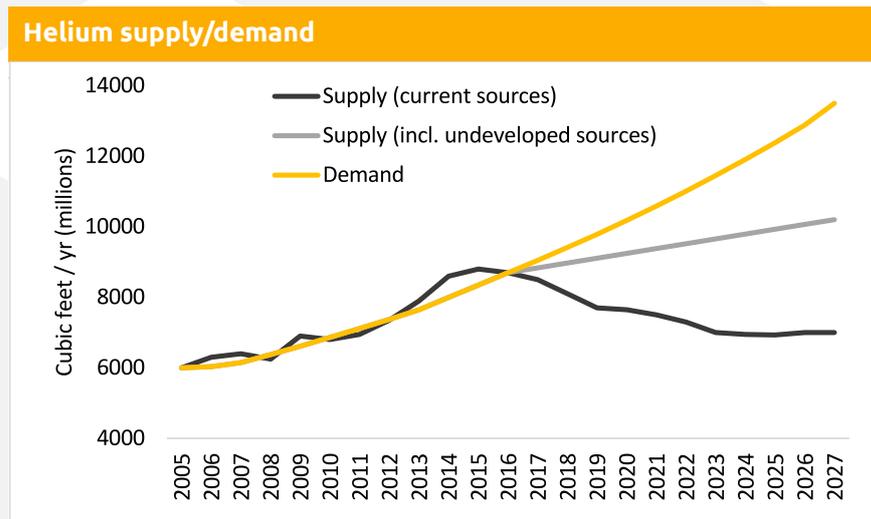
Anthony Hamilton, executive director - Managing partner, Westmarket Capital PLC, is a Fellow of the Institute of Directors in London and is an accountant by profession with more than 35 years of extensive experience in international business, from investment advice to oil & gas, exploration and production of gold, diamonds, base metals and property development

Mark Wallace, executive director - A managing partner at Westmarket Capital PLC, he holds a Bachelor of Economics & Accounting. He is a chartered accountant and has more than 25 years' expertise in the global financial markets having held positions with internationally renowned investment banks and advisory firms including Standard Chartered Capital Markets, Cantor Fitzgerald and Credit Lyonnais in London and Natwest Capital Markets in Sydney.

Helium supply versus demand

Helium is an essential industrial gas, with numerous critical applications; however, the available supply of helium is expected to lag behind demand growth in the coming years.

The following chart shows the global supply/demand balance for helium. We argue that these dynamics are very supportive of the business case for Georgina Energy.



Source: US Geological Survey

Some 75% of the world's helium supply comes from three sources: Ras Laffan Industrial City in Qatar; ExxonMobil in Wyoming, United States of America; and the US Bureau of Land Management ("BLM") operated US Federal Helium Reserve in Amarillo, Texas, United States of America.

The Federal Helium Reserve is undergoing a process of liquidating its assets under the terms of the Helium Stewardship Act of 2013. An annual auction has taken place over the last five years, and the last auction (September 2018) saw the price increase by 135% compared with the previous year. There are to be no further auctions, with the remaining helium being sold by private sale with a target of fully liquidating the reserve by 2021.

The ExxonMobil site in Wyoming is considered to be a depleting source and is included within the black line in the above chart.

Meanwhile, the Qatari supply comes from very low concentrations of helium extracted from natural gas. There is no way of 'squeezing out' more helium from these sources.

Demand drivers:

Demand for helium is driven by several industrial applications. These include (percentages from the US Geological Survey):

- **MRI scanners - 30% of global demand.** In medical MRI scanners, liquid helium is used to cool the super-conducting coils. There are no currently used alternatives to helium, and the demand for these devices continues to grow strongly, particularly in emerging markets such as India and China.
- **Lifting gas - 17% of demand.** Helium is used in lighter-than-air systems such as aerostats for weather monitoring.
- **Analytical & Laboratory - 14%.** For example, helium is used as an inert 'carrier' in gas chromatography.
- **Welding - 9%.** Prevents hot metals from reacting with elements in the air.

Three sources dominate the world helium market. Alternative sources must be found

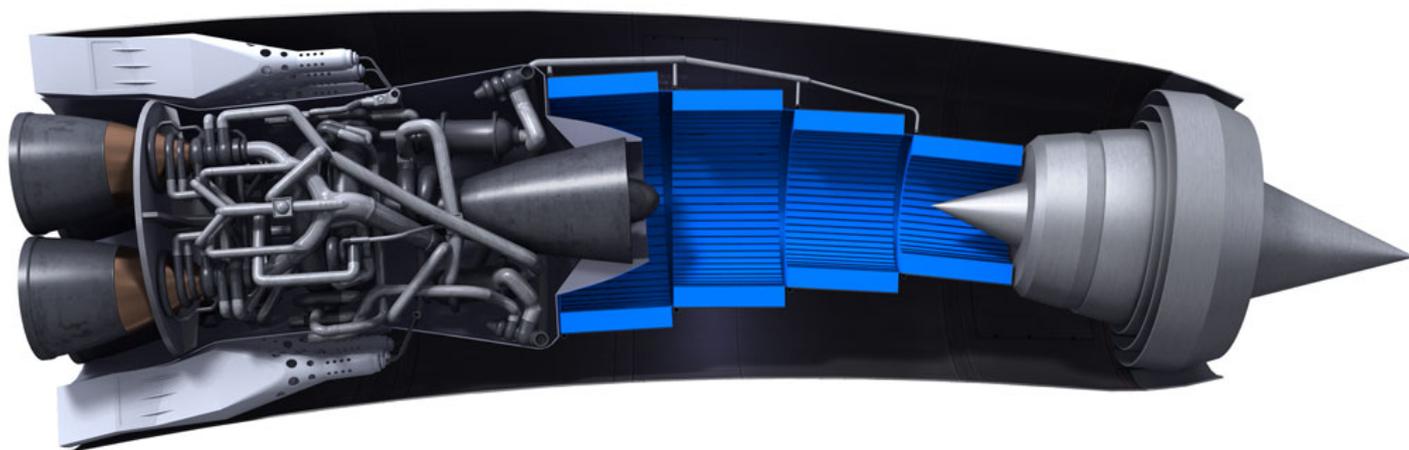
Demand is driven by high-tech, fast growing applications for helium

- **Others - Engineering and science 6%, Semiconductor manufacture 5%, Leak detection 5%, Hard drive & Tech 14%**

These applications are weighted towards high technology and high growth end markets. Furthermore, many of these applications have significant barriers to the substitution of helium with other gases, in terms of the actual physics of the gas or the cost of redesigning complex systems to accommodate a substitute.

Recent news flow has increased market awareness of certain applications within the Engineer and Science segment, specifically in aerospace/space projects. In September 2019 a company called Reaction Engines in the UK announced the next steps in its project to produce a hybrid jet/rocket engine for aircraft. The technology would allow flights from London to Sydney in 4 hours. The engine uses helium in its super-cooling system.

The Sabre engine



Source: Reaction Engines

Even if the Sabre engine is never used in civil aircraft, we note that Reaction Engines has partnerships with BAE Systems and Rolls Royce, which could lead to applications for the engine, or for the super-cooling system, in military or space projects.

Other aerospace/space uses of helium include Elon Musk's SpaceX rocket programme. This is already fully operational in delivering payloads to the International Space Station, and satellites into orbit, and SpaceX has plans for vehicles to reach deeper space. The SpaceX family of rockets uses helium pressurisation in its fuel delivery system.

Space and aerospace are examples of newer applications which are driving demand for helium and where helium would be very difficult to substitute.

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