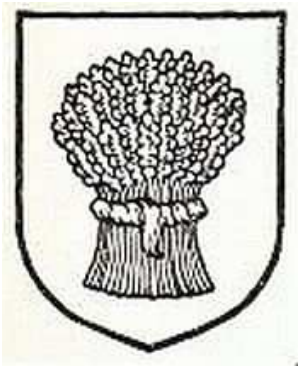
Thursday, October 22, 2020



HALLGARTEN & COMPANY

Sector Review

Christopher Ecclestone
cecclestone@hallgartenco.com

Helium

Hot Air… or Not?

	Strategy	Ticker	Price	12mth range		Market Cap (mn)
American Helium	Neutral	AHE.v	$0.405	$0.035-$1.28	CAD	$1.62
Blue Star Helium	Neutral	BNL.ax	$0.044	$0.01-$0.05	AUD	$48.60
Central Petroleum	Neutral	CTP.ax	$0.125	$0.065-$0.175	AUD	$87.00
Desert Mountain Energy	Neutral	DME.v	$1.68	$0.14-$1.88	CAD	$83.00
Helium One	n/a					
Imperial Helium	n/a					
NASCO Energie & Rohstoff	n/a					
Royal Helium	Neutral	RHC.v	$0.39	$0.02-$0.58	CAD	$21.43

Helium

Hot Air… or Not?

- + Soaring demand for Helium is being driven by its usage as a cooling agent in the burgeoning data centres that drive the internet and most specifically The Cloud, but also cryptomining
- + International tensions in the semiconductor industry are going to drive China into being a bigger player in this space that is a major Helium consumer
- + The Bureau of Land Management has long controlled the Helium stockpile of the US government and has been instrumental in creating the US dominance of the Helium space over the last century
- + The growth in demand for Helium has spurred players to enter the space, with new listed and near-listing developers surfacing over the last three years
- + Exploitation of natural gas fields means that the myriad restraints that stymie, delay and add to the costs of a mining operation are largely absent
- ✘ The US government is signaling a lower profile for its Helium "stockpile" or even the total elimination of this strategic asset
- ✘ The space (i.e. the end-market) has long been in the grip of a cartel of the super-large industrial gas players, who have been price setters

Mining the Intangible

It may be going somewhat *off-piste* to discuss the merits and prospects of a gas, rather than a metal, but in our view, the whole Periodic Table is "fair game".

Helium has become something of a minor sensation in recent times with sceptics claiming it is a sectional interest of a few promoters running short of ideas. The curious paradox is that the upsurge of interest has occurred at a time when the US has signaled Helium as one of its critical elements, but is still proceeding with the rundown of its stockpiles of the gas. How this makes an attractive scenario for new entrants to the production eludes us, except if one subscribes to the (attractive) thesis that the soaring demand from the likes of server farms (for cooling) to support the burgeoning internet will provide an exponential rise in demand that far exceeds releases from the stockpile.

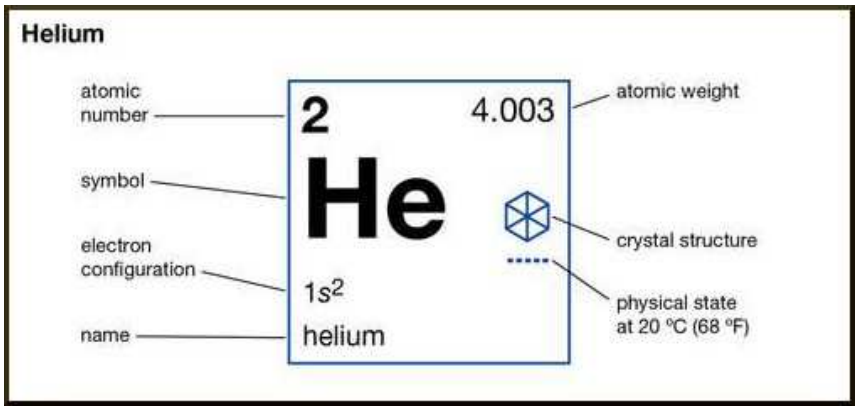
In this review we shall look at Helium and its dynamics, its sources, the state of paly on the all-important US policy towards the element and then briefly discuss the upsurge in wannabes (both listed and unlisted) seeking to enter the Helium production space.

Helium

Helium is named for the Greek Titan of the Sun, Helios. It is a chemical element with the symbol He and

atomic number 2. It is a colorless, odorless, tasteless, non-toxic, inert, monatomic gas, the first in the noble gas group in the periodic table. Its boiling point is the lowest among all the elements.

Helium was first detected as an unknown, yellow spectral line signature in 1868. The formal discovery of the element was made in 1895 by two Swedish chemists, Per Teodor Cleve and Nils Abraham Langlet, who found Helium emanating from the uranium ore, cleveite, a variety of uraninite.



Previously, terrestrial Helium—a non-renewable resource because once released into the atmosphere, it readily escapes into space—was thought to be in increasingly short supply. However, recent studies suggest that Helium produced deep in the earth by radioactive decay can collect in natural gas reserves in larger than expected quantities, in some cases, having been released by volcanic activity.

Uses

Helium's most well-known, but actually minor use, is as a lifting gas in balloons and airships.

Liquid Helium is used in cryogenics (its largest single use, absorbing about a quarter of production), particularly in the cooling of superconducting magnets, with the main commercial application being in MRI scanners. There is no substitute for Helium in cryogenic applications, where temperatures below –429 °F are required.

Hot on the heels of that application is the crucial role in microprocessor chip manufacture, creating and maintaining the environments for growing crystals to make silicon wafers. This is a battle ground for the near future with the US tightening the screws on China with regard to access to chip technologies.

Helium's other industrial uses include as a pressurizing and purge gas, as a protective atmosphere for arc welding, and in fibre optic cables, microscopes and airbags.

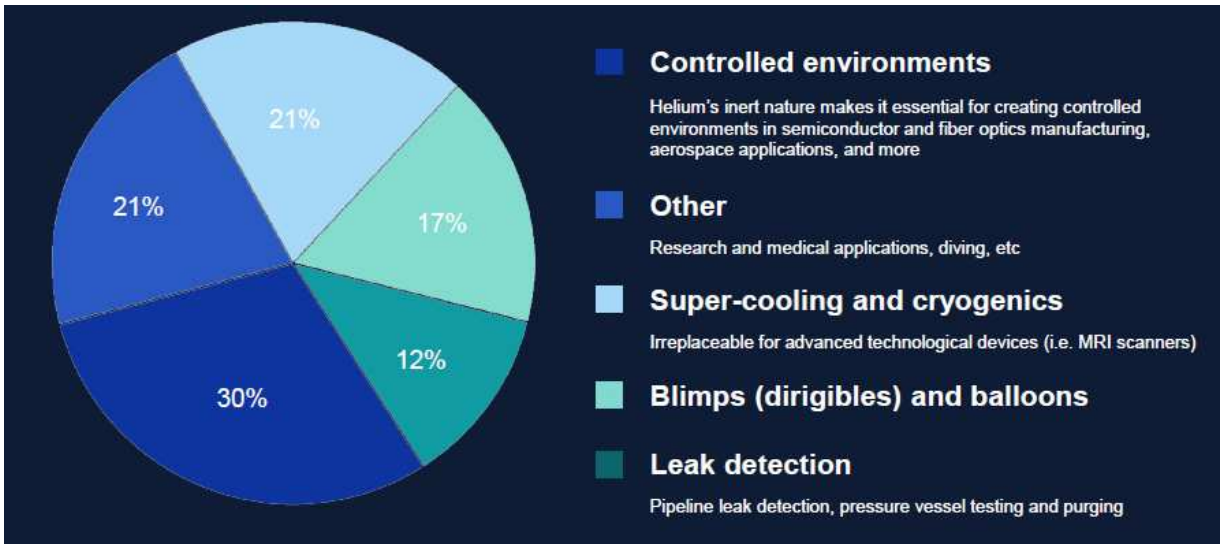
Helium has uses in the space industry, where it is used to keep satellite instruments cool and clean out rocket engines. Helium is used as a cooling medium for the Large Hadron Collider (LHC). A mixture of 80% Helium and 20% oxygen is used by deep-sea divers.

In scientific research, the behavior of the two fluid phases of Helium-4 (Helium I and Helium II) is important to researchers studying quantum mechanics (in particular the property of superfluidity) and to those looking at the phenomena, such as superconductivity, produced in matter near absolute zero.

Argon can be substituted for Helium in welding, and Hydrogen can be substituted for Helium in some lighter-than-air applications in which the flammable nature of Hydrogen is not objectionable. Hydrogen is also being investigated as a substitute for Helium in deep-sea diving applications below 1,000 feet.

Demand

Annual global demand for Helium reached 6.3 billion cubic feet (Bcf) year in 2018. Given the 2018 cessation on U.S. Bureau of Land Management (BLM) Helium sales, the global Helium market is expected to experience a prolonged deficit.



Source: Imperial Helium

Of these categories all look to have good growth prospects, and with controlled environments and supercooling having a combined 51% of the demand and both having extremely propitious outlooks, Helium manages to break the mold of those elements that have some usages growing and others shrinking.

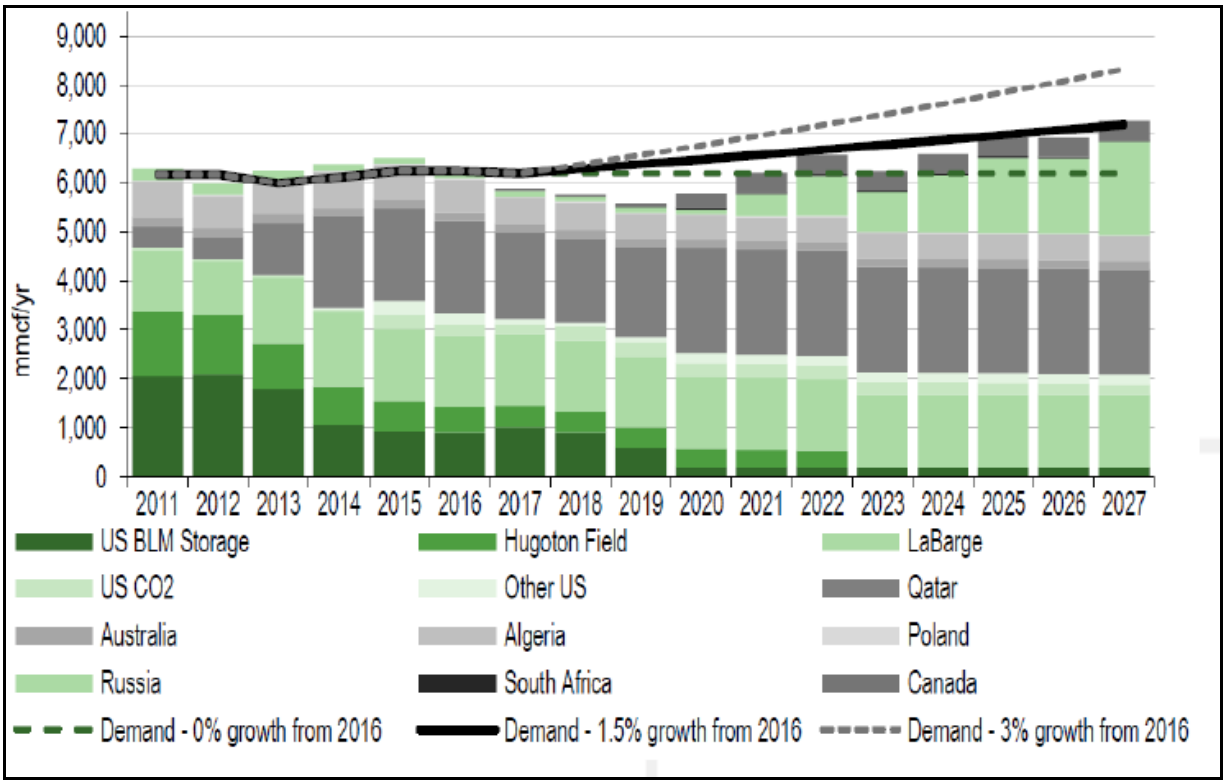
It is interesting to also consider the usages that the USGS claims that Helium was used for with magnetic resonance imaging at 30%; lifting gas at 17%; analytical and laboratory applications at 14%; welding at 9%; engineering and scientific applications at 6%; leak detection and semiconductor manufacturing at 5% each; and various other minor applications taking the remaining 14%.

Availability & Extraction

Helium is relatively rare at 5.2 ppm by volume in the atmosphere. As mentioned earlier, most terrestrial Helium today has been created by the natural radioactive decay of heavy radioactive elements (Thorium and Uranium). This radiogenic Helium is trapped with natural gas in concentrations as great as 7% by volume, from which it is extracted commercially by a low-temperature separation process, called

fractional distillation.

In 1903, large reserves of Helium were found in natural gas fields in parts of the United States. That discovery propelled the US into the role as the world's dominant producer of Helium for nearly 100 years and it remains so. A part of this dominance has been the Federal Helium Reserve (FHR) which was established in 1925. The FHR was originally set up as a strategic store for U.S. airships but since 2013 has auctioned its supplies annually. The last time the U.S. auctioned off Helium was in August 2018, with another auction not expected until 2021. US Federal Reserve closes 2021 (~13% of FY 2016 global supply).



Source: BLM/USGS

The sparseness of auctions resulted in a price surge. In some experts' opinions, the gas starts being economically worth extracting when it has helium content of 0.5%. It is notable that virtually no Helium is recycled.

Players – an Oligopoly

The Helium space is dominated, according to Kornbluth Helium Consulting, by the same old, same old that rule the roost in the industrial gases with Air Liquide, Linde (that merged with Praxair a couple of years ago) and Air Products controlling something like 85% of the market (each reputedly having between 17-35% of the market). Then it is said that Matheson Tri-Gas have around 5% market share and

the other names of much less weight are the Japanese companies, Iwatani and Taiyo Nippon Sanso (both with strong positions in Asia, but weak globally) and Uniper (with HQ in Germany) with all three having small market shares at the global level.

Of Helium distributors, the global major industrial gas companies hold semiconductor trade rights, such as Air Liquide, Linde/Praxair and Air Products, and vie with each other for market shares. However, after Linde and Praxair merged, the merged entity was believed to have become by far the market leader. The Japanese companies Taiyo Nippon Sanso and Iwatani also participate in this semiconductor market with an estimated total share of 20% to 30%.

The Chinese Helium market is almost an alternative universe but the country has been an importer of US-sourced Helium over the last decade and the Japanese companies have filling and distribution centres with China. We shall discuss this further along.

Asia – the Rising Consumer

According to US Intelligas Consulting, the global market stood at 168 million m^3 in 2017 with Asia comprising around 30% of the market. Their estimate is that the Asian market, including Japan, South Korea, Taiwan and China, totalled 59 million m3 in 2017. This represents 35% of the global market surpassing the major consumer, the US (54 million m^3).

China is the largest user, estimated to be at double Japanese consumption. South Korea had a comparable helium market with Japan around 2010, but, according to Intelligas, from 2012 the Japanese market has shrunk somewhat. So by 2017, the South Korean market outperformed Japan, with consumption of 12.1 million m^3, adding one million m^3 from the previous year. South Korea's demand is driven by its important semiconductor industry with global majors such as Samsung Electronics and SK hynix.

Helium supply in South Korea, according to The Gas Review, is controlled by the global industrial gas majors, who monopolise semiconductor trade rights, with Air Products and Praxair (now a division of Linde) holding comparatively high market shares. The two Japanese companies also supply South Korea, but they are positioned as minor suppliers.

In Taiwan, just as in South Korea, semiconductor manufacturers such as Taiwan Semiconductor Manufacturing (TSMC), United Microelectronics (UMC), Micron Technology and Powerchip Technology, consume the largest quantities of Helium. The market scale suddenly expanded in the 2010s and reached 8.3 million m^3 in 2017. The Gas Review claims that Air Products is the strongest supplier to Taiwan.

The largest market in southern Asia in 2017 was India at 3.3 million m^3 due to its substantial MRI and optical fibre business, followed by Singapore at 1.8 million m^3 with its semiconductor industry (such as Micron Technology and Globalfoundries). Beyond the semiconductor business, Singapore as a major shipping hub, serves as a Helium distribution centre for the major gas companies. Companies like Air

Liquide and Praxair gasify and fill Helium into cylinders in Singapore and then distribute these to the adjacent countries, Malaysia and Indonesia.

Interestingly, none of the new players in the exploration/development game claim to (or project how) they would meet rising Asian demand.

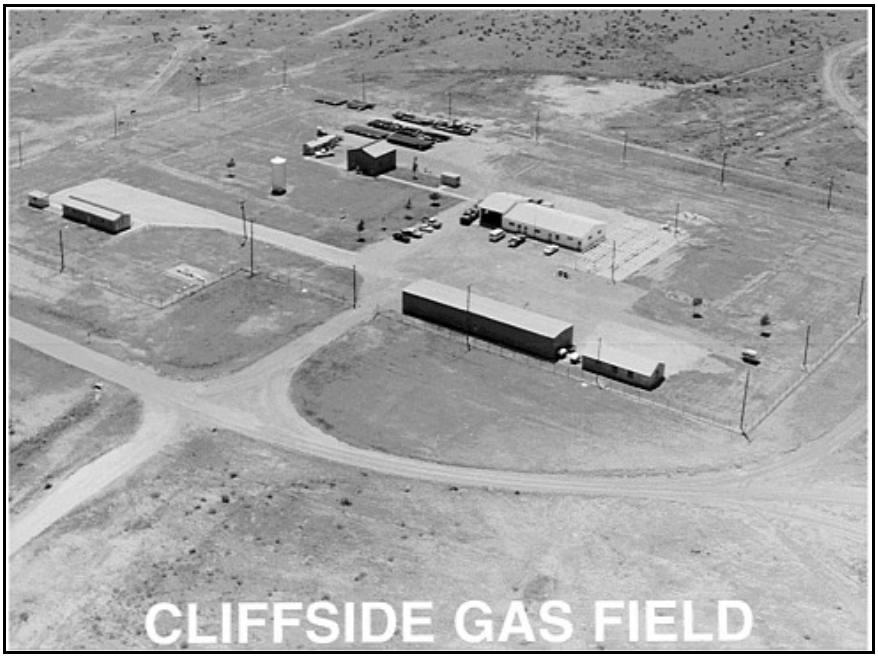
The US Stockpile

Under the Helium Stewardship Act of 2013, the Bureau of Land Management (BLM) manages the Federal Helium Program, which includes all operations of the Cliffside Field Helium storage reservoir, in Potter County, TX, and the government's crude Helium pipeline system. Private firms that sell Grade-A Helium to Federal agencies are required to purchase a like amount of (in-kind) crude Helium from the BLM. The law mandates that the BLM sell at auction Federal Conservation Helium stored in Bush Dome at the Cliffside Field.

BLM Stockpile (in cubic metres) as at end Sept 2019

Inventory	Authorised for disposal	Disposal Plan FY2019	Disposals FY2019
68	51.4	4.8	4.8

The last auction was completed in the summer of 2018. Because the remaining conservation Helium is less than 83.2 million m^3, the law requires that the BLM begin disposal of all Helium assets including all operations of the Cliffside Field Helium storage reservoir and pipeline system and complete the sale by the end of 2021. In the meantime, the BLM will continue to make in-kind Helium available to Federal customers.



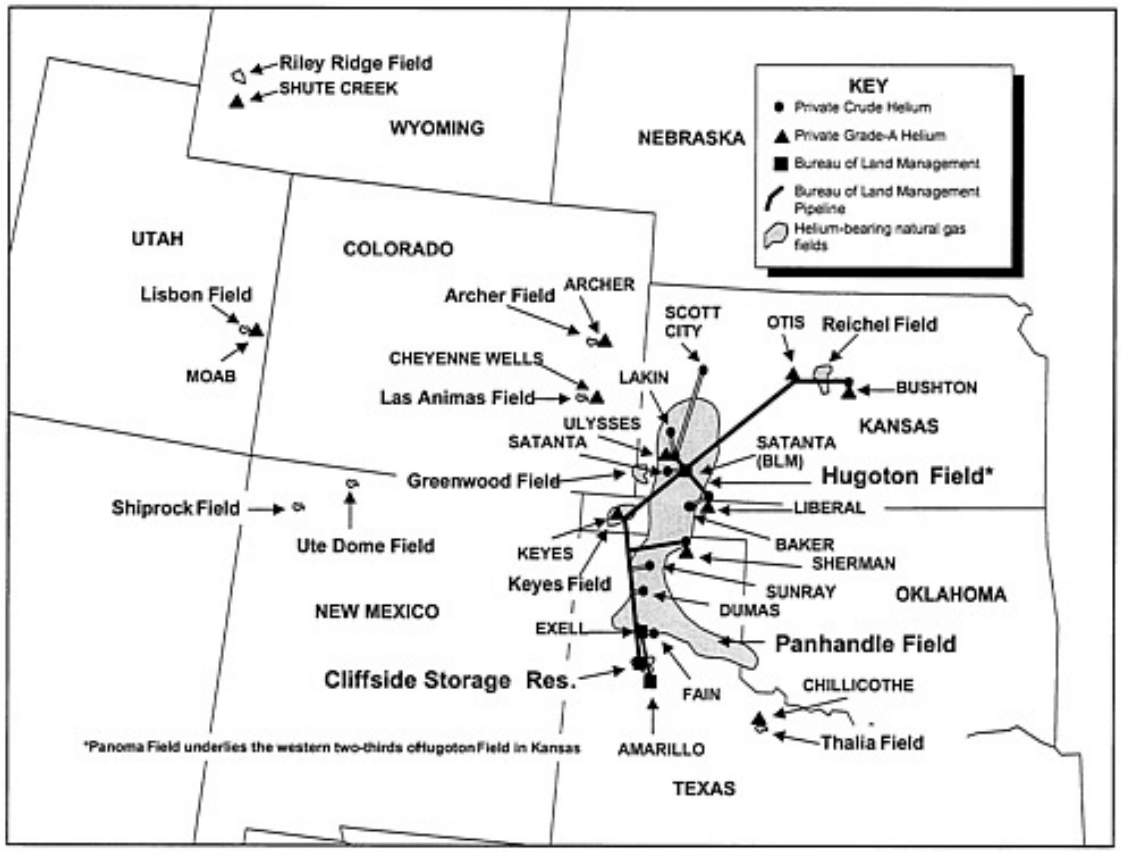
The Federally-owned facilities have a role in storing and moving around the product owned by the government and the private players. In FY 2019, privately owned companies purchased about 4.8 million m^3 of in-kind crude Helium. During FY 2019, the BLM's Amarillo field office accepted around 3 million m^3 of private Helium for storage and redelivered nearly 24.2 million m^3. As of September 30, 2019, about 67.4 million m^3 of privately owned Helium remained in storage at Cliffside Field.

Frankly, in this day and age of constant questioning of resource security one wonders how the running down of the US reserve actually serves strategic ends as publicly stated. That this should be happening under the Trump Administration is even more poignant.

US Dominance

We are on record as noting that the metal that the US unequivocally dominates is Beryllium and it has zealously guarded that status since WW2. However, in broadening from "metals" to "elements" one can also add Helium to the select components of the Periodic table where the US can call the shots.

The USGS maintains that there are around fourteen plants (one in Arizona, two in Colorado, five in Kansas, one in Oklahoma, four in Texas, and one in Utah) that extracted, in 2019, Helium from natural gas and produced crude Helium that ranged from 50% to 99% Helium.



One plant in Colorado and another in Wyoming extracted Helium from natural gas and produced Grade-A Helium. Three plants in Kansas and one in Oklahoma accepted crude Helium from other producers and the BLM pipeline and purified it to Grade-A Helium. Even in the Be-space, the US government played no role in production, but in the Helium space, interestingly, it does.

The USGS estimated in its 2020 report that the value of Grade-A Helium (99.997% or greater) extracted in the US during 2019, by private industry, was around $717 million.

Over and beyond its own production the US sources some product from imports of which the suppliers are: Qatar, 79%; Canada, 8%; Algeria, 5%; Portugal, 4%; and others for 4%.

The curious thing is that the US government has almost been working against the maintenance of the country's dominance in this element rather than encouraging. Under Democrat regimes one might expect this but the Trump Administration has done little to nothing to back up its rhetoric as far as Helium is concerned. A draft list of 35 critical minerals, including Helium, was released on February 16, 2018 as the result of President Trump's Executive Order 13817, which asked the U.S. Department of the Interior and the Secretary of Defense to publish a list of mineral commodities that are vital to U.S. interests. However, as noted earlier, sales from the stockpile have continued. By selling the stockpile it takes the edge off pricing (which probably suits Praxair & Air Products) but does little to encourage the development of new deposits or processing capacity.

If the trend continues, ultimately the stockpile will be reduced to a rump that will essentially removes all influence from the US government on pricing.

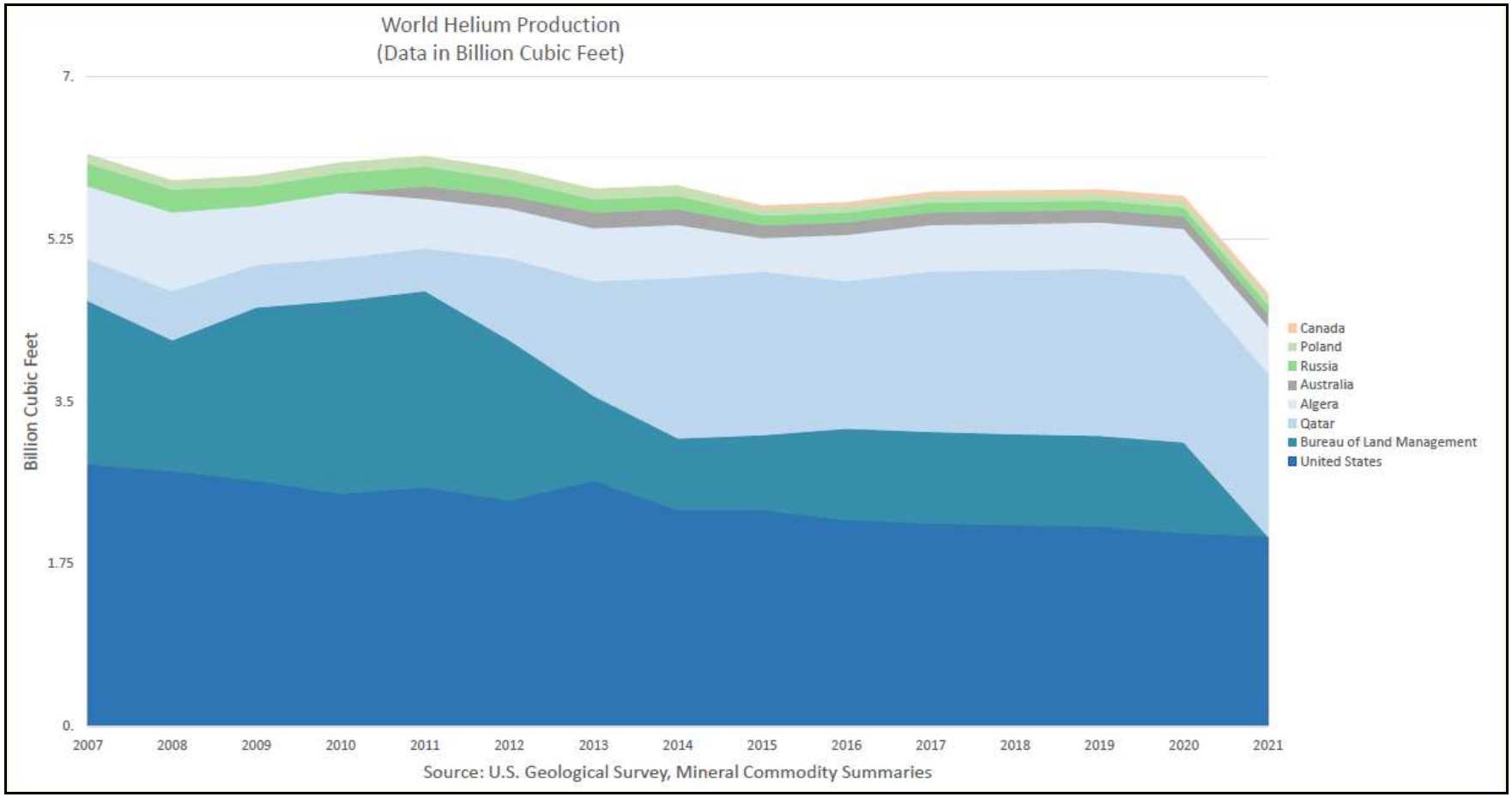
Global Players?

The USGS estimates that the various Helium-endowed gas fields in the US contain around 3.9 billion metre^3 (140 billion cubic feet) of Helium. It then estimates that the Helium resources of the world, exclusive of the United States, were around 31.3 billion metre^3 (1.13 trillion cubic feet).

The locations and volumes of the major deposits are:

- Qatar 10.1 bn m^3
- Algeria 8.2 bn m^3
- Russia 6.8 bn m^3
- Canada 2.0bn m^3
- China 1.1bn m^3

In essence there is no shortage of Helium reserves at the global level. The main differences are access to markets, processing capability and grade of the Helium within the broader natgas resource.


World Helium Production
(Data in Billion Cubic Feet)
Billion Cubic Feet
7.
5.25
3.5
1.75
0.
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Canada
Poland
Russia
Australia
Algera
Qatar
Bureau of Land Management
United States
Source: U.S. Geological Survey, Mineral Commodity Summaries

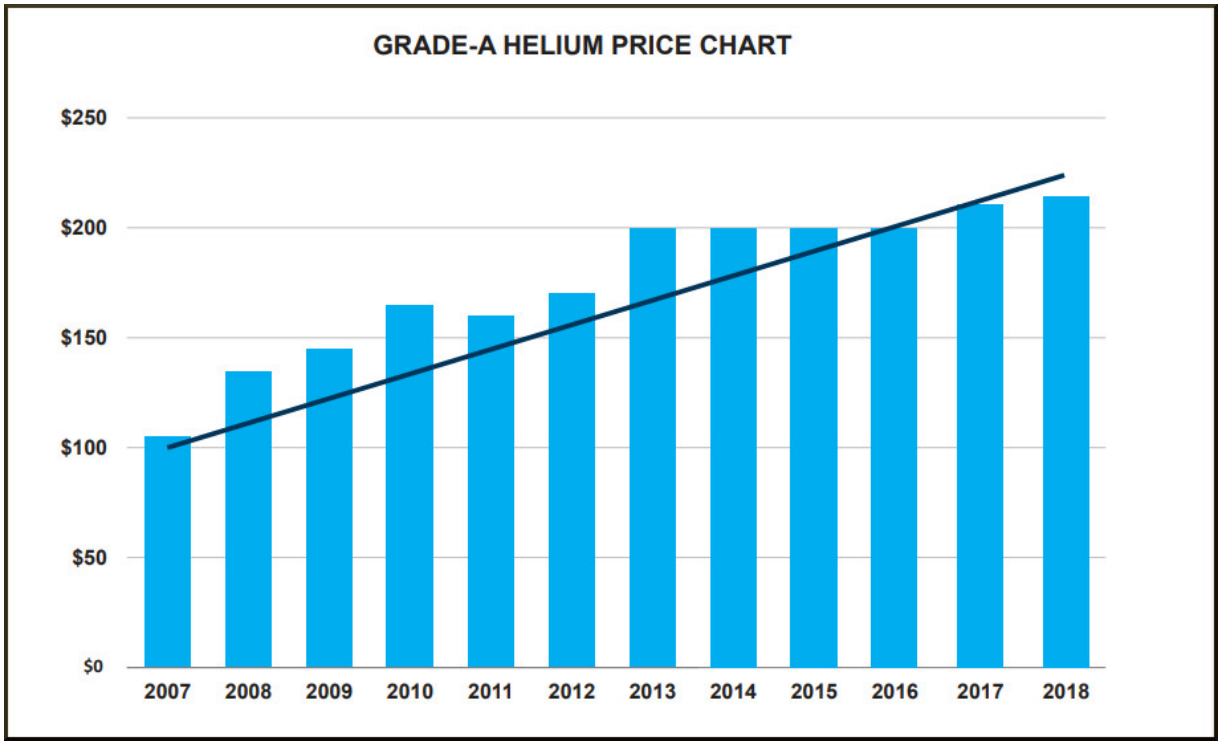
Pricing

The price of Helium in the US market is essentially the force that sets the price in the rest of the world (though the US government seems determined to abdicate holding in its hand this important lever).

The Helium Privatization Act (HPA) of 1996 outlined plans for the BLM to sell off the majority of its helium reserves at a formula-driven sale price. This ended up being lower than the market price of helium which consequently encouraged overconsumption and discouraged new helium production.

The USGS reported that in FY19, the price for crude Helium to government users was $3.10 per m^3 and to non-government users was $4.29 per m^3. The price for the government-owned Helium is mandated by the Helium Stewardship Act of 2013 (Public Law 113–40) and determined through public auctions and industry surveys. The last year Helium prices were posted by the Federal Government was in 2018. The estimated price for private industry's Grade-A Helium was about $7.57 per m^3, with some producers posting surcharges to this price.

The market price of Helium (as compared to the sale price from the US stockpile) doubled between 2010 and 2013 as can be seen on the chart on the following page. This was largely the product of organic growth in demand. However, from 2018 a different dynamic came into play when prices in the US Government Crude Helium Auction increased from $119 to $280, representing a 135% increase YoY.



Source: USGS

Controlled Environments?

Semiconductors rarely bother the minds of the masses but with rising trade tensions and US concerns about Chinese technology theft, the world is rapidly evolving into two camps…… essentially China and the "Rest", with the "Rest" being an exclusive group of countries in the semiconductor space. Now China is going to have to build out its semiconductor industry but this will be akin to "making bricks without straw" as the patents are held elsewhere. As part of this buildout it will need its own sources of Helium and on a much larger scale than heretofore.

Helium has several properties that make it an important adjunct to the semiconductor manufacturing process. As an "inert" gas it does not react with other elements thus making it eminently suitable as the environment for the chemical reactions that take place during the processing. Many of the reactions are gas- or liquid-based, so having an inert gas around the silicon prevents any unwanted reactions.

Semiconductor chips are manufactured on base silicon wafers largely using deposition (additive) and etch (subtractive) chemical reactions in the gas phase to create thin layers of different materials on the wafer surface. Reactions take place in a vacuum chamber on single wafers between 100 and 300 mm in diameter. Generally, several different reactive gases are used at a time, and these are further activated using heat or plasma energy sources.

Helium also has a high thermal conductivity, meaning that it conducts heat away effectively. This helps to control the temperature of the silicon during these processes. This is increasingly important as the dimensions of the circuitry on the silicon continue to shrink. It would be impossible to drive this miniaturization without the process control that helium provides.

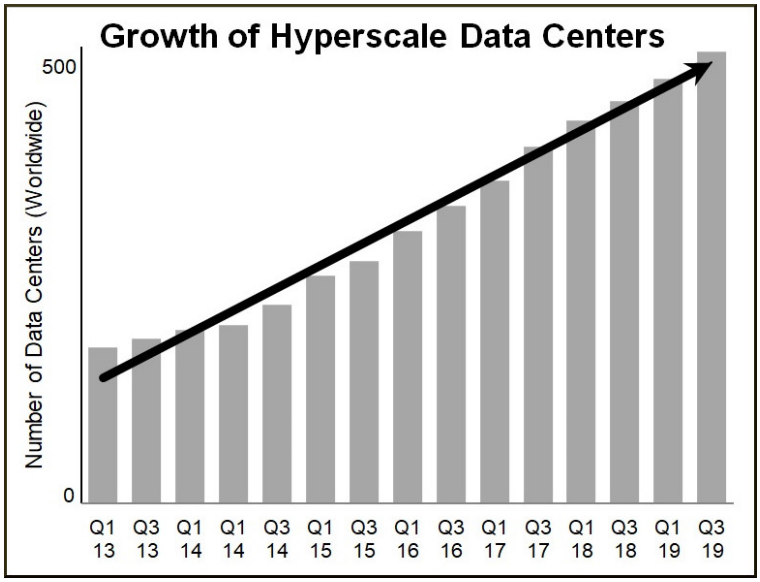
Finally, Helium is used because of its cooling properties. It is a liquid at extremely low temperatures, which allows it to cool magnets to a temperature that optimizes their properties. The magnets are used in some types of semiconductor equipment, as well as magnetic resonance imaging (MRI) systems and other medical applications.

Date Centres and the Need to Chill

The growth of the data centre market has been exponential recent times with the advent of "the cloud" plus the growth in internet traffic producing a voracious demand for more facilities.

The US dominance of this space is historical (as much as "history" exists in the internet space). The highest rates of growth have been in Europe and Asia-Pacific. China, Japan, the UK, Germany, and Australia now account for 32% of the total.

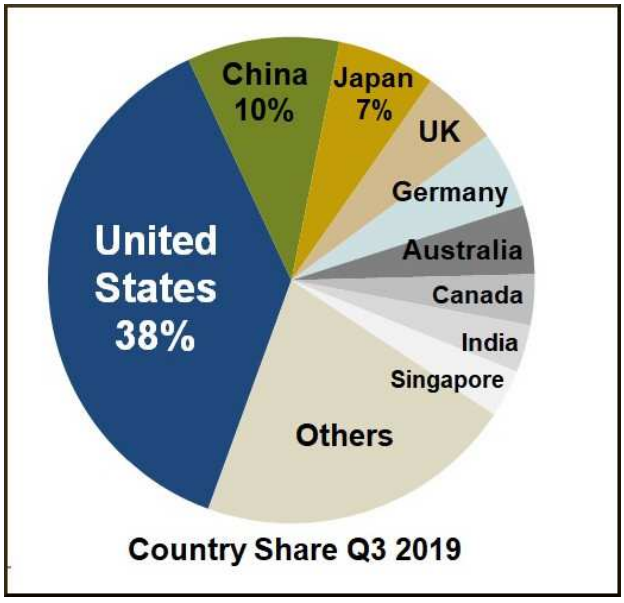
Amazon has been somewhat of a stealth mover in this space, with its data storage business rapidly closing on its more prosaic e-commerce business. Eventually we suspect Amazon will be forced to split this business off and when it does the sheer size of it will become apparent to more than just technology mavens.



According to Synergy Research, the number of data centres crossed the 500 mark in 3Q19 whereas at the end of 2017, Synergy was tracking only 390 hyperscale facilities.

Source: Synergy Research

Other providers of internet content, such as Netlix, Google and Facebook have sought to encompass their burgeoning data storage needs with their own facilities. Netflix to give an example occupies at some periods of the day up to 35% of all the bandwidth in the US. While other services/sites can go slow on refreshing, providers like Netflix cannot afford to have users staring at a spinning icon waiting for bandwidth to be available to continue watching a film.



Theoretically, there is no reason with high-speed cabling and ever expanding bandwidth that all data centres should not have ended up in the same place (i.e. the US West coast). However for China and other nations such a over-concentration would thwart their attempts at controlling traffic and reinforcing their own data security and reducing their vulnerability to US geo-political actions.

On another score the centres need to multiply in various international networks to provide redundancy and reduce vulnerability to action against US-housed data. This is notable in the pie chart to the left showing data centre shares.

Source: Synergy Research

Already the EU is agitating that "its" data be stored within its legal remit. Beyond that, though, the undersea cabling and satellite systems are the immense weak point in global security. Just as coup-leaders in the past wanted to seize the radio stations and telegraph office, now a hostile party would want to sever undersea data cables and shoot down satellites.

As the data centres multiply so does their need for cooling. How do data centres with their rising status as "hot-spots" fit into concepts of mitigating global warming? This is where Helium's potential as a coolant of large scale server farms comes into play.

China & Helium

As always there is the adage "lies, damned lies and (Chinese) statistics". Ostensibly it appears like global Helium production and China are non-intersecting sets. The USGS has China's current production marked as not available. This raises questions about where their reserves numbers for China come from and how reliable they might be.

The estimate of US Intelligas Consulting was that Helium was growing in China at an annual rate of 5% to 13%, reaching a market scale of 21.6 million m^3 in 2017. Helium weighs 0.1785 kilogram per cubic meter, so the Intelligas estimate equates to 3.855 tonnes.

According to a report in the South China Morning Post (SCMP) in mid-2020, China uses more than 4,300 tonnes of helium per annum. The difference being composed, we presume, of incremental growth in the intervening three years.

In the currently rapidly deteriorating state of relations between the two countries, particularly when it comes to strategic materials, it begs the question as to how China can advance its Great Firewall ambitions in terms of servers, and the Helium to cool them. With things "hotting up" in the area of microchip manufacture/trade, the Helium supply situation also has the potential to impact China.

Surprisingly, China only opened its first facility to produce Helium at a commercial scale in July 2020. It was located inside a natural gas processing plant in Yanchi county, Ningxia, according to a statement from the Chinese Academy of Sciences (CAS), which designed and built it.

The SCMP reported that scientists working on the project expect the annual output to reach 20 tonnes, in the form of liquid Helium. The cost of the plant was low, at around 30 million to 50 million yuan (US$4.3 million to US$7.1 million) thereby putting self-reliance in reach if such plants are replicated in other gasfields that are endowed with Helium.

It's worth noting though that it seems China's natgas is not as rich in Helium as the fields in the US. However, a research team with the CAS's Technical Institute of Physics and Chemistry in Beijing found there was a considerable amount of helium in the waste product of Chinese natural gas plants.

When methane becomes a liquid at low temperature, the Helium stays in the air and becomes

concentrated, forming a waste substance known as boil-off gas. While Helium makes up only about 1% of that boil-off gas, it is enough to extract, according to the Chinese, at a relatively low cost. Separating the Helium from the boil-off gas required an extremely low temperature, and the cooling pump was needed that also needed importing and it was the evolution of a domestic source for the cooling pump that gave the process viability despite its low grade. However, it sounds to be much, much lower margin than US production. However, we suspect the Chinese are prepared to tolerate poor (or no) margins for the resource dependence this process delivers.

The fear for Chinese Helium users has been that in a tit-for-tat action if China blocked the export of Rare Earths to the US then the US could choke off Helium supplies to China. The start of the process of domestic extraction within China decouples the country (and its server farms to maintain the Great Firewall) from the global Helium market dominated by Western players and puts China at a further remove from the US.

Contenders

The last few years have seen an upwelling (pardon the pun) of Helium wannabes. The first we encountered was **First Helium** (with a project in Canada) a couple of years ago, then it went off the grid. It is oft confused with **Helium One** which is slightly less low-profile but focused on Tanzania.

As is so often the case, an outsized price move in an element that had hitherto been disregarded by the promotorial classes, spurred the influx of players. The catalyst was when prices in the US Government Crude Helium Auction in 2018 increased from $119.31 to $279.95, representing a 135% increase YoY.

A plethora of new players (both listed & unlisted) appeared over the last two years and some have seen exponential share price appreciation despite their models still being quite nebulous (pardon, again, the pun).

	Status	Main Project	Location
American Helium	Developer	Greater Uinta Basin	USA
Blue Star Helium	Developer	Enterprise	USA
Central Petroleum	Producing	Southern Amadeus	Australia
Desert Mountain Energy	Developer	Heliopolis	USA
Helium One	Developer	Rukwa	Tanzania
Imperial Helium	Explorer	n/a	Canada
NASCO Energie & Rohstoff	Producing	DBK	USA
Royal Helium	Developer	Climax	Canada

Some of the promotion has been exceptionally successful with **Desert Mountain Energy** (a stock we met in its previous incarnation as the exotically-named African Queen Mines). This stock has oscillated between 14 cts and CAD$1.88 over the last twelve months. Much of this rise was due to its Heliopolis

project in Arizona claiming historic production of 9.23 billion ft^3, with grades of Helium produced ranging from 8%-10%, versus (what it claims to be) the industry benchmark of 0.3% to 1% for commercial grade.

The most real of the players we mention in this review would appear to be a German company, **NASCO Energie & Rohstoff AG** which has been developing its activities since 2014 and thus predates all the other new players. Despite its European origins its helium production is focused solely on a site in northeast Arizona, with the Navajo name Dineh-bi-Keyah (DBK), in an area known as the Four Corners region.

Nasco drills, completes, refines and sells its own Helium. Its revenue model is underpinned by a 13-year long-term supply contract with Praxair Inc., the leading industrial gas company in the USA.

Nasco claims that the DBK field is remarkable due to its raw gas having an above-average helium content of more than 5%. As noted earlier the gas starts being economical to extract when it has a Helium content of 0.5%.

On the financing front, Nasco is also in another league having closed earlier this year a US$83 million securitization transaction featured an investment grade rated senior tranche which was sold to an investment group led by Nuveen, a New York-based investment firm.

The ASX-listed **Blue Star Helium** has resources on two of its projects and is still drilling. The Model Dome field is a past producer with grades claimed to be of an impressive 8%. It is interesting to note some of the torturous language employed with regard to Helium resources when it states “the estimated quantities of helium that may potentially be recovered by the application of a future development project relate to undiscovered accumulations”. It claims a short 6-month path to production, when it decides to go to production.

The crucial issue is access to the Helium pipeline network and those in proximity to it get a cost advantage. Exactly how Helium One moves it product in Tanzania (and to what eventual end-user) remains a mystery. Likewise projects in the Plains States of Canada are in “Oil Country” but don’t have access to the pipeline infrastructure that US producers enjoy.

Conclusion

Helium is famous in the minds of the masses for its *told-you-so* moment when the Hindenburg (an airship levitated by hydrogen) caught fire and crashed spectacularly in May 1937 in New Jersey. The lesson taken was that the more expensive (at the time) Helium was a much safer bet for airships, though the Hindenburg’s demise was also the high point (or low point) of airships as a mode of passenger travel.

The prospect of changes in the way the US government stockpiles and manages the country’s Helium resource is seen by an opportunity by a number of listed and unlisted wannabes. However the trend for

the government to disengage from stockpiling of strategic resources is not new and goes back as far as the years of the Clinton Administration at the end of last century. When the subject was first broached it did not engender the type of enthusiasm that we have seen in recent years to create vehicles to enter the Helium space. Most of the recent players have appeared in the last three years and curiously have surfaced just as the US, under Trump, has been ramping up the mantra of resource security. Something seems contrary about all this.

Will whoever dominates the White House after January of 2021 be continuing with the disposal campaign? Will they speed it up, slow it down or stop it? In any case, at the current rate of disposals, the BLM stockpile will remain a feature in the marketplace for another 11 years, at least.

There is little in the way of obstacles to getting into production in the Helium space. If one can build a processing/separation plant then one is potentially off to the races. It doesn't give one access to the Helium pipeline if one isn't in close proximity. Grade matters for the economics, but little else stands in the way. The key determinant is going to be access to capital. One does not need a NI43-101 conjured up by mineral geologists, one instead needs reservoir engineers to opine on the potential size and grade of the gasfields under consideration. The separation itself is not rocket science.

Some of the new players are undoubtedly real (e.g. Nasco) and the others are at various points along the spectrum from being merely a marketing "twinkle in the eye" of promoters to being at a point where they have secured concessions with proven reserves and just need to fund processing plants and then begin extraction. As to which of the putative players with Helium in the name are dedicated to the gas in question or the mere production of thot air, only time will tell.

Important disclosures

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60 Madison Ave, 6th Floor, New York, NY, 10010