

Helium start-up activity at unprecedented levels

By Phil Kornbluth 10 June 2021

One result of the recurring shortages that helium markets experienced during the last decade has been an unprecedented amount of interest in exploring for helium among small start-up companies.



Source: North American Helium

North American Helium recently started up its second helium plant at Battle Creek, Saskatchewan, Canada

Helium shortages 2.0 (2011-2013) and 3.0 (Q1 2018-Q1 2020) received frequent attention from the media, while driving prices for helium to levels where helium production from natural gas with uneconomic concentrations of hydrocarbons became economically viable for the first time. It is not surprising that entrepreneurs, many with backgrounds in oil and gas exploration or mining, picked up on the 'Helium Story' and established companies to explore for helium or pivoted their existing companies toward helium exploration. As I write this article, an estimated 30 or more small

companies are involved with helium exploration primarily in the Southwestern United States, Saskatchewan and Alberta, Canada, Tanzania, Australia and South Africa.

Before going further, it is worth noting that about 95% of the world's helium supply is produced as a by-product of either natural gas processing or liquefied natural gas (LNG) production. As the hydrocarbons contained in the natural gas are purified, the inert components of the natural gas are separated and vented to the atmosphere. When there is a sufficient amount of helium in the vent gas, there is the possibility of further processing this vent gas to purify and, in some cases, liquefy the helium. In these situations, where helium is a by-product, or co-product, most of the costs of exploration, drilling, transportation and gas processing are borne by the hydrocarbon products.

There is also quite a bit of gas in the ground that has fairly high helium concentrations in gas that is primarily nitrogen or, less frequently, CO₂, and with uneconomic concentrations of hydrocarbons. Until helium shortages 2.0/3.0 drove helium prices to much higher levels, these gas deposits were uneconomic, as potential helium revenue was not high enough to absorb the entire cost of exploration, drilling, transportation and processing. Although there are a few exceptions, most of the recent start-up activity is focused on this non-hydrocarbon gas, where nitrogen is the major component and 'Green Helium' is the primary commercial target. At recent prices, helium exploration and production can be quite a profitable undertaking for companies who are well managed, well-financed and able to identify a commercially viable reserve of helium bearing gas.

As noted above, we now have approximately 30 companies involved with the rush to explore for helium around the world. These companies are at various stages of development. Some of them have successfully raised large amounts of capital, most have acquired leases to explore for helium, some have drilled wells and a handful or so are actually producing helium. Around 10 or so of these companies are now publicly traded. Nearly all of them are actively looking for additional investment.

While the increase in helium exploration is generally a positive development, there have also been some negative aspects to this activity. In an effort to raise capital and fund development, some of the helium start-ups have made exaggerated claims about future helium shortages, helium prices and prospects for demand growth. A realistic view of the future for helium markets should be good enough to attract investors without creating inflated (pun intended) expectations. There is still an attractive helium investment opportunity in a world without recurring helium shortages and where prices have moderated from recent levels.

When the dust settles on the 'Helium Rush', I expect that a handful of the more well managed start-ups will achieve sustained success, while others will be less successful at securing capital and finding helium. With a robust pipeline of new projects in the works from conventional hydrocarbon

by-product sources, it is likely that greater than 90% of the world's helium supply will still be a by-product of natural gas processing or LNG production.

There is one significant caveat to this outlook. I am pretty sure that the Green Energy crowd has not even realised the inconvenient fact that a world without energy from natural gas would lose most of its current sources of helium supply. If the world were to follow through on current 'Green' aspirations to decrease the rate of climate change and significantly reduces its reliance on natural gas, it would have a very significant detrimental impact on future helium supply and helium users.

About the author

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