

Helium Shortage 3.0: Shortage should ease somewhat in 2020

By Phil Kornbluth | 1 August 2019

As gasworld has not reported on the status of Helium Shortage 3.0 since its March 2019 edition, it seems timely to provide an update on the current state of global helium supply and the outlook going forward.

August will be the 19th month of Helium Shortage 3.0 and, presuming that ExxonMobil has proceeded with the planned five week maintenance shutdown of its Wyoming, USA plant that was scheduled for July and August, could turn out to be the peak of the current shortage. While the magnitude of the supply deficit is estimated to be in the range of 15%, +/- a few percent, when ExxonMobil's plant is running normally, the supply deficit jumped to approximately 35% with ExxonMobil's plant totally off-line.

To make the situation even worse, the Arzew, Algeria source was also expected to be down for maintenance (unrelated to the recent fire at the Arzew complex) during most or all of July, reducing supply by a further 3–4%. For the good of helium markets and helium consumers, let's hope that ExxonMobil is able to return its plant to full production by the end of August and that helium markets gradually recover during September.

While there is little doubt that the helium shortage will continue through the end of 2019, early indications are that the shortage will ease somewhat during 2020. Thus far in 2019, helium markets have benefited from new or increased production from several sources. After a lengthy start-up delay, the Shiprock Helium Plant in Arizona is finally beginning to produce high purity crude helium/balloon gas and it should produce helium at a rate in excess of 100 MMCF per year when start-up problems have been resolved. Tenawa's Haven, Kansas plant has also added production of crude helium at a rate of roughly 100 MMCF per year and Energy Transfer's Sunray, Texas plant has resumed production at a similar rate after a fire shut the plant down for a lengthy period.



Source: Gazprom

Construction of Amur Gas Processing Plant in Russia

In addition, Tacitus Corporation has also begun to produce gaseous helium from a small plant located on the Navajo Reservation. Production from these four sources should contribute at least 300 MMCF per year, adding around 5% to worldwide helium supply.

Going forward, 2020 should see a couple of larger increments to global helium supply. The expansion of Air Products' Arzew, Algeria source is expected to enter the market as early as Q1 of 2020, while Qatar Petroleum has stated that the Barzan gas plant, which will provide feedgas for the Qatar 3 Helium Plant, will commence production by the end of 2019. Once the gas processing plant starts operation, helium production should not be far behind and is expected to commence by Q3 of 2020. While it is known that Qatar 3 will have nameplate capacity of 425 MMCF per year, it may take some time to ramp up to that level. While details have been closely guarded, it would not be unreasonable to speculate that these two sources could combine to add 400 MMCF per year or more to world supply by Q3 of 2020. That would represent a 6–7% increment to world supply.

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When we combine the 2019 and 2020 additions to supply, we could see an additional 11–12% increase in supply before the end of 2020. While this will be partially offset by the continued decline of crude helium deliverability from the US Bureau of Land Management’s (BLM) System, the imbalance between helium supply and demand should be reduced considerably by the end of 2020. While “reduced” does not mean “eliminated”, restoration of a very tight balance between supply and demand is possible if a few percent of demand destruction results from the reduced availability and higher prices for helium caused by the shortage, or if helium demand is reduced due to a recession. Summing this up, 2020 should see a reduction of the current supply imbalance, with the improvements coming in steps when new supply from Algeria and Qatar enters the market.

As previously forecast, helium markets should finally return to a comfortable balance when the first 700 MMCF per year tranche from Gazprom’s Amur Project enters the market in 2021. Current expectations are for production to commence during 2021’s second quarter.

While we will probably look back at July/August 2019 as the peak of Helium Shortage 3.0, there are still considerable risks to this forecast. Delayed start-ups of new projects are always a risk. Also, planned and unplanned outages at existing sources are always a factor in the health of the global helium supply chain. Finally, there is a greater exposure to political risk than there used to be in the global helium supply chain, with 30% of the world’s helium supply passing through the Strait of Hormuz, which has recently been threatened by Iran, and Algeria experiencing widespread protests against the regime of President Bouteflika.

Kornbluth Helium Consulting has a relatively optimistic view and does not expect events in either of these areas to spin out of control and negatively impact helium supply for an extended period.

About the author

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