



Helium shortage 4.0 – Continuing uncertainty in the market

By Phil Kornbluth on Oct 11, 2022

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Helium Shortage 4.0 began on 1st July 2021 when a four-month maintenance outage of the US Bureau of Land Management's (BLM) Crude Helium Enrichment Unit (CHEU) removed more than 10% of worldwide capacity from the market.

While the severity of the shortage probably peaked in the first half of 2022, the shortage has persisted for the last 15 months and there is still a great deal of uncertainty as to when Helium Shortage 4.0 will finally come to an end.

As most people who follow the helium market know, 2022 was expected to be a year of transition from tight helium supply to ample supply, due to the start of production from Gazprom's huge Amur Project. At full capacity, with three trains each running close to their 750 million standard cubic feet (MMSCF) annual capacity, the Amur Project has the potential to increase global helium supply by roughly one-third.

After a brief start-up in September 2021, the plant was taken down according to plan to complete construction. While the helium plant was down, the gas processing plants that provide feedgas to the plant experienced a fire and an explosion that knocked the Amur out of commission for what is expected to be the entirety of 2022. In addition to the lack of production from Amur, helium supply has been negatively impacted by another extended outage of the CHEU that lasted from mid-January through to mid-June, planned maintenance outages that reduced output from Qatar during the first quarter (Q1), reduced output from Algeria due to the war in Ukraine, and a fire at a natural gas processing plant in Haven, Kansas.

With the CHEU delivering crude helium feedgas into the BLM Pipeline fairly reliably since 10th July, the helium supply deficit is somewhat less severe than it was earlier in the year. However, Helium Shortage 4.0 continues – with four of the five helium majors continuing to allocate supply to their customers. The key questions on most market participants' minds are...

- When will Helium Shortage 4.0 come to an end?
- What factors will lead to the end of Helium Shortage 4.0?

Kornbluth Helium Consulting's (KHeC's) view is that the Helium Shortage 4.0 (or at least very tight supply) will continue until the Amur Project restarts and sustains meaningful production. Unfortunately, there is still very little credible information

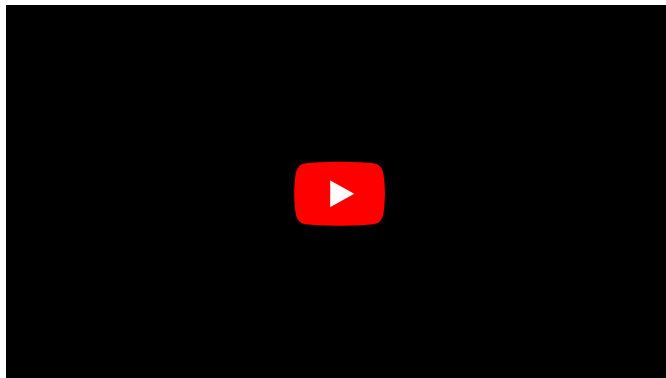
available from Gazprom related to their progress toward restarting helium production. There are lots of rumours flying around about Gazprom's plans to restart the plant, but it has been really difficult to separate fact from fiction.

The rumour mill

There have been rumours about restarting one helium train at half capacity, cannibalizing one natural gas processing plant to repair the damage caused by the fires and explosion or tying in feedgas from other natural gas processing trains to the first helium train.

My guess is that Amur will restart helium production in Q2 or Q3 of 2023, but this is truly just a guess on my part. When production begins, logistics to and from Amur are likely to be very challenging as shipments via the port of Vladivostok have been hampered by the impact of sanctions on Western carriers.

Speculation about Amur assumes that supply from Amur will find its way to the market despite the ongoing war in Ukraine and the possibility of sanctions on helium exports. KHeC's view is that there is plenty of demand from Asian countries (most notably China, Korea and Taiwan) who are not participating in sanctions, to absorb new supply from Amur and Irkutsk Oil Company's project. Similar to what we have witnessed with Russian exports of oil, it does not seem that it would be all that difficult to evade sanctions, as long as there are ready buyers.



What we do know...

Besides production from Amur, the other factor that could mitigate the shortage is a global recession that seems increasingly likely. It is interesting to note that Helium Shortage 1.0, way back in 2006-2007, was brought to an end largely due to the impact of the Great Recession on demand for helium.

There may also be some positive impact due to new supply coming into the market from other sources. Irkutsk Oil Company is planning to commence production from its Yarakinsky Plant (~250 MMSCF) during Q4 2022 and smaller increments to supply are expected from North American Helium (~110 MMSCF, Canada), Renegen (~25 MMSC, South Africa) and possibly a few others between Q4 2022 and the end of 2023. While every bit of new supply is helpful, these additions will not be sufficient to end the shortage.

Taking all of the above into account, it seems fairly certain that Helium Shortage 4.0 will persist for at least another 6-9 months, and could go on even longer if Amur's restart is delayed. In the meantime, helium consumers should expect continued allocation of supply and increasing prices.