FALVEY INSURANCE GROUP

ONE GROUP,
MANY SOLUTIONS™
401-792-0144
falveyinsurancegroup.com

Supply Chain Analysis: Qatari Helium Shortages

Falvey Insurance Group

March 2026

Supply Shock: Qatari Helium Exports

Impact on Semiconductors, AI, and Cargo Insurance

> *An examination of the Iran conflict's impact on Qatar's helium production & exports, with a focus on helium's role in semiconductors & AI and how this may affect cargo insurance submissions*

Prepared by Risk Management Dept., Authored by Josh Rooney

Falvey Insurance Group - Introduction

As part of FIG's Risk Management offerings, we are proud to provide our assureds with complex operating knowledge of global events, geopolitical impacts, and supply chain adjustments in real-time. This article is an example of the work we complete on a daily basis to not only insure, but also alert and advise our clients. We would be happy to discuss our internal risk management offerings – as well as the actionable insights that we draw out of research such as this – with any interested brokers or clients. Please reach out to riskteam@falveyins.com for more information on this.

Executive Summary

As Iran retaliated in response to coordinated U.S.-Israeli strikes on its leadership, its Gulf neighbors have faced swathes of drone and missile strikes on their infrastructure as Iranian leaders hope a global energy crisis may pressure American forces to back down. In addition to oil and petroleum product shortages, this resulted in **a two-front supply chain failure for helium**, which plays an irreplaceable role in the manufacturing of advanced semiconductor chips; the only export route for the supply is via the now-closed Strait of Hormuz, and Qatar's Ras Laffan facility – responsible for 30-38% of global helium output – has no confirmed restart date after multiple Iranian strikes on the industrial city.[i] While fragile ceasefires are being attempted, safe passage of the Strait of Hormuz is not yet possible.

Asian semiconductor chip manufacturers are particularly exposed. South Korea and Taiwan each account for 18% of global semiconductor production capacity[ii], with the former importing 64.7% of its helium from Qatar in 2025[iii]. Japan faces similar exposures. Suppliers such as Samsung, SK Hynix (South Korea), and TSMC (Taiwan) are already rationing and some customers are only receiving **half of normal supply**.[iv] Furthermore, on April 8th, TSMC called for the controversial restart of Taiwan's nuclear plants, hoping to kickstart local production in the face of lengthy Gulf delays.[v]

Should this disruption remain unresolved, the high-tech industry (AI, EVs, consumer electronics, etc.) may see drastic price increases for semiconductor chips in the face of a global shortage. Spot prices for helium have doubled since the war began, and industry experts warned in March that these could surge by another 50% in 2-3 months[vi]. **If the Iran conflict remains prolonged, cargo insurance providers may see a surge in increased-frequency, higher-value semiconductor chip (and related tech)**

Prepared by Risk Management Dept., Authored by Josh Rooney

submissions, as tech companies seek to secure critical materials before true shortages occur.

Helium's Role in the Semiconductor Supply Chain

Helium is a **process-critical** noble gas in modern wafer fabrication, used for thermal management, plasma stability, and ultra-clean environments. With a light molecular weight and small molecular compound, helium can squeeze into porous areas of various materials, making it essential for cooling wafers and chamber surfaces during high temperature etch and deposition steps. Helium also is an inert gas, meaning that it does not react with other elements. Without helium, preventing pattern distortion and thermal damage at advanced nodes during semiconductor production would be extremely difficult.[vii]

The United States and Qatar dominate global production, followed by Algeria, Russia, Canada and emerging producers such as China, Poland, South Africa, Tanzania, and Australia. Helium is a relatively inaccessible gas and requires high expenditure to harvest (costly mining & cooling operations), so reductions in global supply are not easily replaceable.

Shortages in Qatari Helium Production

As a result of the ongoing conflict between Iran, the U.S., and Israel, the Strait of Hormuz has been rendered mostly impassible due to Iranian drone threats. This alone caused Qatar to shut down exports temporarily, but after Iranian attacks on the Ras Laffan facility on March 2nd and 19th – the largest LNG-producing site in the world, owned by state company QatarEnergy – Qatar has been forced to halt production as well. Before this shutdown, **Qatar represented approximately a third of global helium supply**.

As Iran seeks to continue racking up international pressure on the U.S. by targeting Gulf energy sites, Qatar's helium infrastructure remains highly vulnerable to further drone and missile strikes. Industrial gas firms seem willing to weather this impact for now – while an industry expert cited that firms would need to reallocate capital equipment if Ras Laffan remained offline past March 20th, there is no evidence of any broad relocation of equipment out of the country as of April 28th. However, these attacks wiped out 17% of Qatar's LNG capacity for up to five years, with helium output dropping 14%. The damaged units will cost QatarEnergy approximately $26B to rebuild.[viii]

Container transit from the Persian Gulf to South Korea takes approximately one month under normal circumstances, meaning that the final pre-war shipments from Qatar arrived in **early April 2026**. It's likely that large chipmakers (Samsung, SK Hynix) have weeks/months of reserves, but they are under significant pressure to rework contracts to secure long-term supply and avoid exhausting helium reserves.[ix]

Helium prices have shot up amid Qatar's production stoppage, with prompt delivered helium for uncontracted values going up by 10-15%. A two-month conflict may imply a 25-40% increase, and a three-month conflict could cause a 40-60% increase, including "**genuine physical shortages outside the best-buffered regions**," especially in Europe and Asia. Spot prices, which represent a small slice of total helium sales, have increased by 70-100%[x]. Contract prices, which represent most helium sales, are being renegotiated more slowly but may increase if the supply disruption continues.[xi]

Supply Chain & Industry Impact

Should Gulf helium exports remain gridlocked for a prolonged period, chipmakers would not find easy alternative sources. While the United States remains the world's largest helium producer, North American Helium CEO stressed that only "gradual diversification" of the helium supply chain, along with a "shift back to more geopolitically stable regions," can bring stability back to helium supply[xii]. Helium in the U.S. is co-produced from specific, helium-rich natural gas fields or dedicated helium projects; developing new wells, pipelines and purification factories would constitute a multi-year process, not a quick response to a market shock. Domestic production was estimated to "remain stable" between 2025 and 2029[xiii], indicating **there is not spare U.S. capacity ready** to swing the tens of millions of cubic meters per year required to respond to the sudden outage in Qatar. Additionally, with domestic AI, quantum and semiconductor facilities framed as strategic assets (especially after the CHIPS act), there is a strong incentive for the U.S. to **prioritize internal needs in North America**, rather than fully backstopping all lost Qatari volumes to Asia.

The immediate focus for chipmakers is mitigation and survival. If constrained flows persist and deplete the current inventory buffers, manufacturers will face tighter allocations and increased working-capital requirements. There may be a push for chipmakers to **prioritize the production of higher-margin AI chips over less profitable components, exacerbating existing shortages in the broader electronics market**. Top-tier manufacturers are trying to mitigate the drop in helium supply by "recycling," with some facilities capable of reusing a significant amount of their helium in chip production. However, this is relatively new technology and is not currently advanced enough to implement on an industry-wide scale. In the short term, chipmakers may be comfortable shifting to higher-priced helium imports, but this may not be sustainable if the conflict remains prolonged.

While many industries rely on regular semiconductor chip shipments, the AI industry would be hit particularly hard in the case of any manufacturing delays causing downstream impacts in the supply chain. Semiconductor chips are the bedrock of the data center industry, powering servers, storage systems, and networking equipment, which is undergoing an enormous transformation driven by the current AI boom. For reference, Taiwan Semiconductor Manufacturing Company (TSMC) produces ~90% of the world's most advanced logic chips and is the sole supplier for many prominent AI accelerators. **A disruption to their helium supply would directly threaten approximately $650B in planned AI investments globally**[xiv]. Additionally, the ripple effects of power costs and other materials (aluminum, bromine) coming from the Gulf could concretely impact the economic calculus driving AI infrastructure investments.

Cargo Insurance Outlook

Any insured accounts that play a significant role in either purchasing or selling semiconductor chips will undoubtedly need to face economic and logistical hurdles soon regarding lower helium supply from the Gulf. In addition to the semiconductor industry, helium plays a critical role in MRI/medical cryogenic applications, laboratories and research, aerospace, and welding-related industries. These sectors require high purity and continuity of supply, and in some cryogenic uses helium has no practical substitute.[xv] As indicated earlier, it may be valuable for these companies to get ahead of the curve by evaluating options to **diversify their inbound shipments of helium-dependent products** like semiconductors, especially if they are sourcing from Asian producers. It is recommended to **secure critical inventory as soon as possible** to avoid any shortage price spikes. Cargo insurance providers should also keep a watchful eye out for a new wave of semiconductor chip shipment submissions. The AI industry (along with other high-tech operations) may push for **frequent, high-value inbound shipments** of this commodity as companies attempt to secure long-term supply of critical chips and other materials. Falvey Insurance Group offers supply chain management and risk mitigation consultation services to its semiconductor-purchasing/selling assureds, and would be proud to showcase its offerings to any potential clients searching for solutions regarding these matters.

Prepared by Risk Management Dept., Authored by Josh Rooney

[i] Asia Pacific Foundation of Canada. 2026. "Iran Conflict Sparks Helium Shock, Threatens Global Chip Supply." *Asia Pacific Foundation of Canada*. April 16, 2026. https://www.asiapacific.ca/publication/iran-conflict-sparks-helium-shock-threatens-global-chip.
[ii] Kuchler, Phillip. 2026. "Qatar Helium Shutdown Puts Chip Supply Chain on a Two-Week Clock – SK hynix Forced to Diversify after 30% of Global Supply Removed from the Market." Tom's Hardware. Accessed March 23, 2026. https://www.tomshardware.com/tech-industry/qatar-helium-shutdown-puts-chip-supply-chain-on-a-two-week-clock.
[iii] Fusion Worldwide. 2026. "Helium Shortage 2026." Fusion Worldwide. Accessed March 23, 2026. https://www.fusionww.com/insights/helium-shortage-2026.
[iv] Axios. 2026. "Iran War Deflates Global Helium Production." April 7, 2026. https://www.axios.com/2026/04/07/iran-war-qatar-helium-production.
[v] Asia Pacific Foundation of Canada. 2026. "Iran Conflict Sparks Helium Shock, Threatens Global Chip Supply." April 16, 2026. https://www.asiapacific.ca/publication/iran-conflict-sparks-helium-shock-threatens-global-chip.
[vi] Data Centre Magazine. 2026. "US-Iran War Analysis: Will Helium Crisis Hit Data Centres?" Data Centre Magazine. Accessed March 23, 2026. https://datacentremagazine.com/news/us-iran-war-analysis-will-helium-crisis-hit-data-centres.
[vii] Rocky Mountain Air. 2026. "Helium's Role for Semiconductor Production in the Digital Age." Rocky Mountain Air. Accessed March 23, 2026. https://rockymountainair.com/blog/heliums-role-for-semiconductor-production-in-the-digital-age/.
[viii] gCaptain. 2026. "Iran Attack Wipes Out 17% of Qatar's LNG Capacity for up to Five Years." gCaptain. Accessed March 23, 2026. https://gcaptain.com/iran-attack-wipes-out-17-of-qatars-lng-capacity-for-up-to-five-years/.
[ix] AP News. 2026. "Why the Iran War Matters for the World's Helium Supply." March 20, 2026.
[x] The National. 2026. "Iran War Puts 'Endangered' Helium Supplies at Risk as Qatar Halts Exports." The National. March 18, 2026. Accessed March 23, 2026. https://www.thenationalnews.com/business/2026/03/18/iran-war-puts-endangered-helium-supplies-at-risk-as-qatar-halts-exports/.
[xi] IMARC Group. 2026. "Helium (HNT) Price Index, Chart, Trend & Forecast 2026." Accessed April 21, 2026.
[xii] North American Helium. 2026. "North American Helium Comments on Recent Supply Disruptions from Qatar and the Need for Diversified, Secure Helium Sources." Morningstar. March 13, 2026. Accessed March 23, 2026. https://www.morningstar.com/news/business-wire/20260313012669/north-american-helium-comments-on-recent-supply-disruptions-from-qatar-and-the-need-for-diversified-secure-helium-sources.
[xiii] Mining Technology. 2026. "USGS Releases Production Capacity Projections for Seven Critical Minerals over Five Years." Mining Technology. Accessed March 23, 2026. https://www.mining-technology.com/news/usgs-releases-production-capacity-projections-for-seven-critical-minerals-over-five-years/?cf-view.
[xiv] Data Centre Magazine. 2026. "US-Iran War Analysis: Will Helium Crisis Hit Data Centres?" Data Centre Magazine. Accessed March 23, 2026. https://datacentremagazine.com/news/us-iran-war-analysis-will-helium-crisis-hit-data-centres.
[xv] The National. 2026. "Iran War Puts 'Endangered' Helium Supplies at Risk as Qatar Halts Exports." The National. March 18, 2026. Accessed March 23, 2026. https://www.thenationalnews.com/business/2026/03/18/iran-war-puts-endangered-helium-supplies-at-risk-as-qatar-halts-exports/.

Prepared by Risk Management Dept., Authored by Josh Rooney