

The Most Relied-Upon Public Helium Data Is Deeply Unreliable

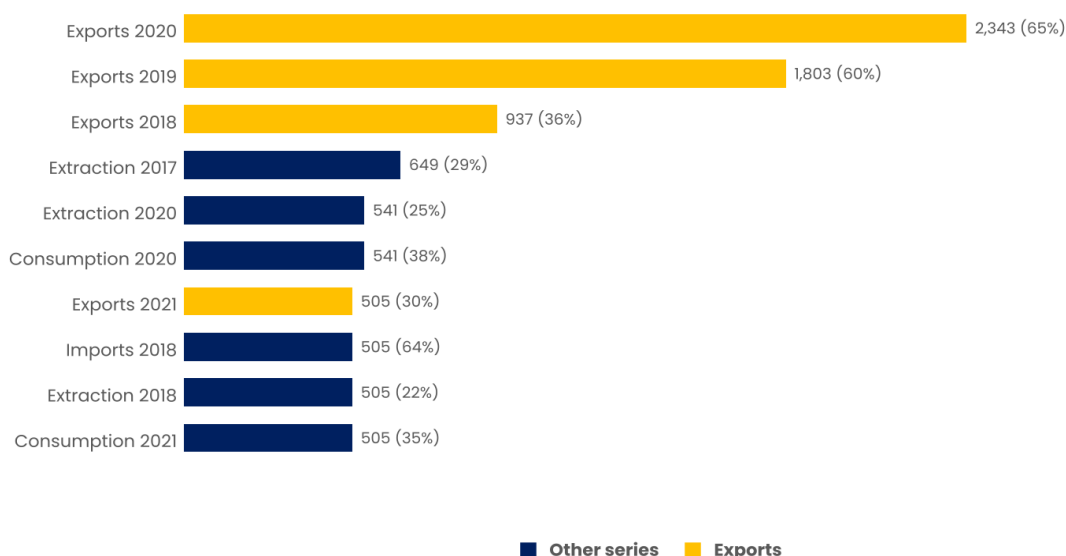
The US Geological Service (USGS) Mineral Commodity Summaries (MCS) is one of the few publicly available sources of helium market data and consequently one of the most widely relied upon. However, the data has been notoriously unreliable (mainly due to inaccurate US Census Bureau export data), as our detailed analysis highlights. In an opaque market such as helium, accurate data is essential for informed decision-making – a key reason behind the launch of AKAP Energy’s Helium Market Data service.

The implications extend beyond commercial decisions to US national security, given helium’s strategic importance. Indeed, the data underpinning the decision to remove helium from the US Critical Minerals List was flawed. While efforts have been made to improve reporting in recent years, progress remains constrained by USGS resources and it being provided with erroneous data. The scale of historical discrepancies is striking: in 2020, for example, the original published export figures implied negative US helium consumption. Even the latest report fails to distinguish between withdrawals from and additions to storage, leaving a material component of the helium market unaccounted for.

Historical data has been heavily revised

Revisions are normal in statistical data, but their scale is notable (see chart below). Rounding also makes it difficult to identify smaller changes, as figures are reported in whole million cubic metres, equivalent to increments of around 35mmcf.

Ten largest restatements in the USGS helium data (mmcf)



Gap between the highest and lowest figure printed for one data year across MCS 2010–2026; % is the latest revision versus the first published figure. Source: USGS MCS, US Census data, AKAP Energy

USGS MCS Overview

The MCS is arguably the most widely cited public source for US helium supply–demand balances and global helium production data. It is free, annual and backed by a federal agency, so its figures are widely used in investor presentations, policy papers and most market models. Therefore, they are frequently repeated and treated as the ground truth. To test this, we lined up every MCS report from the 2010 edition to 2026, each carrying four to five years of historical data and tracked every data year from first print to its latest restatement.

The USGS data is or has been drawn from several sources, including a voluntary annual canvass of private US helium operators (9 of 11 producing companies responded for 2023 covering 95% of sales), Bureau of Land Management records for the Cliffside storage system and US Census Bureau customs declarations for imports and exports, all of which do not share a standardised method of reporting, resulting in significant variations in the data the USGS aggregates. This is visible through the consistent and importantly, the large scale of revisions seen across the MCS reports every year for prior years.

The Critical Minerals List Question

Helium was added to the US critical minerals list in 2018 and dropped in the 2022 revision. It was not reinstated in the final 2025 list, published in November 2025. The [official reason](#), set out in the 2021 draft list, was that helium no longer met the quantitative supply–risk threshold because the US is the world’s leading producer and a net exporter. The principal reason it failed the USGS assessment was not because it lacked strategic importance, but because the methodology assigned a supply–risk score of zero to commodities classified as net exporters.

In our view, helium satisfies the qualitative tests for criticality laid out in the Energy Act. It is **irreplaceable** in several strategic industries, has demonstrated **supply–chain vulnerability** through repeated disruptions and shortages have **meaningful economic consequences**. Given concerns over the accuracy of US trade data, the depletion of federal helium inventories and the concentrated nature of global supply, this likely understates helium’s true supply vulnerability. We believe this creates a strong case for putting helium back on the US Critical Minerals List.

USGS is working to strengthen its methodology to better capture the full scope of mineral criticality. USGS is required to update the critical minerals list every three years, with the next update required by 2028; however, the Secretary of the Interior can authorise earlier updates or additions, which we see as possible given the current market.

If the US exports ~1 bcf a year net, as 2025 the published figures suggest, it looks more secure. However, on our numbers net exports were ~0.5bcf and heading towards zero, with Cliffside winding down and no public data on private storage, it looks very different, particularly in a year when the loss of Qatari supply has shown how quickly the global market tightens.

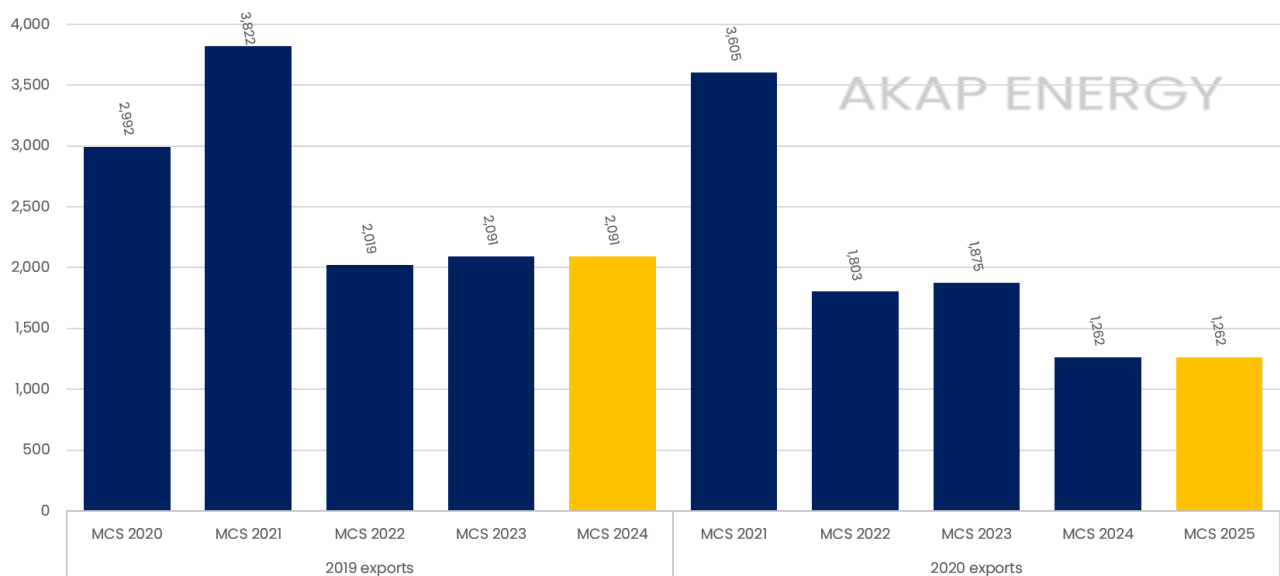
Reported helium exports have shown the largest discrepancies

Based on initially reported data for 2019–2020, the US appeared to be comfortably exporting 3–3.6bcf of helium a year, equivalent to ~40–50% of global supply, which proved to be a heavily overstated figure. MCS 2021 put US exports at 3.8bcf for 2019 and 3.6bcf for 2020. One year later, MCS 2022 cut the same years to 2bcf and 1.8bcf respectively and the MCS 2024 has 2020 at just 1.2bcf. That is a 2.3 bcf (~65%) revision to a single year, equivalent to over a third of global helium production with no explanation given for the restatement.

We have long argued that the US helium import and export data is erroneous as the data is frequently misreported to customs in the wrong units and we have worked with the USGS and customs to improve this.

A footnote in the MCS report has been: “Exports were adjusted by the U.S. Geological Survey for 2018 as the **data reported by the U.S. Census Bureau were unusually high** and may have contained misclassified items.”

US exports for 2019 and 2020 as printed in each MCS edition (mmcf)



Source: USGS MCS 2020–2025, AKAP Energy

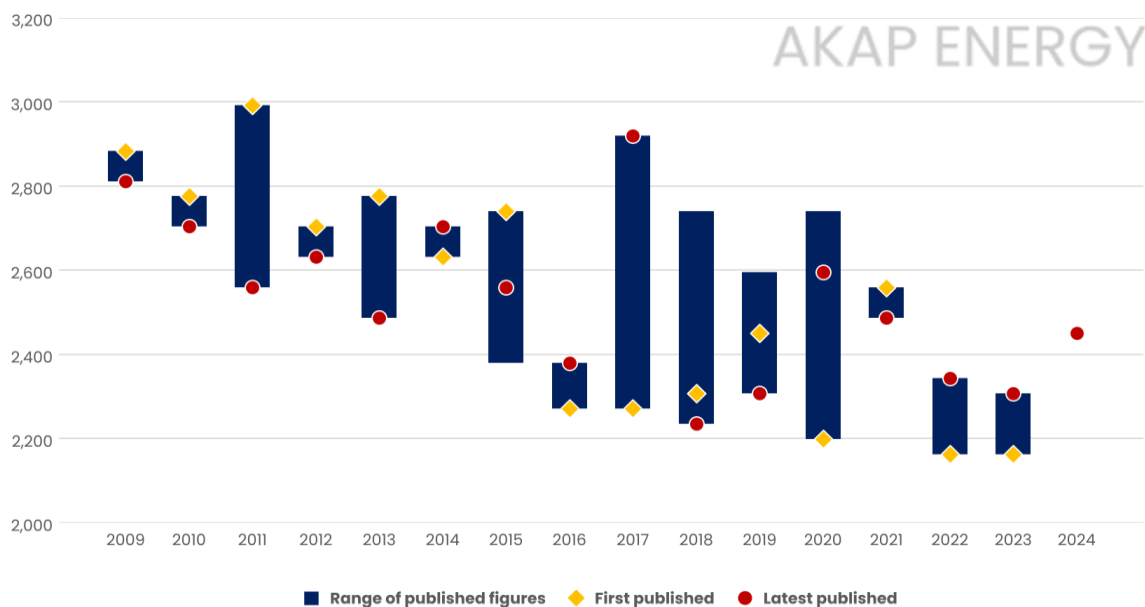
US Helium Supply: surprising revisions given data direct from producers

US helium supply estimates have changed too. Most notably, helium extracted from natural gas in 2017 was first reported at 2.3bcf and later raised to 2.9bcf, a ~650mmcf or ~30% swing. 2018 was revised from 2.3bcf to 2.7 and then down to 2.2bcf across three different reports.

Combining the latest figures together produces a 23% fall in US extraction from 2017 to 2018 that does not appear in any individual report. Similarly, 2020 was revised upwards by ~400mmcf. Also, given that ~1.5bcf/y of supply from La Barge is from readily available data, the size of the errors is even larger for the remaining production.

Prior to the 2024 Mineral Commodity Summaries (MCS), the US helium supply numbers were derived from data reported to the Bureau of Land Management (BLM), with USGS acting as the publisher of that data.

US helium production, range of published figures by data year (mmcf)



Each bar spans the lowest to highest figure printed for that year across MCS 2010–2025.

2024 has been published only once. Source: USGS MCS, AKAP Energy

The world helium production numbers follow the same pattern. Comparing USGS's in-year estimate of global production with its restatement a year later, the average absolute revision over 2009–2024 is ~280 mmcf, or roughly 4–5% of the market. The largest misses were 2009 (–829 mmcf), 2010 (+649 mmcf) and 2020 (+721 mmcf, when the COVID estimate proved far too low). Four of the last five years have been revised upwards by >100mmcf.

Consumption Is Significantly Affected by Revisions

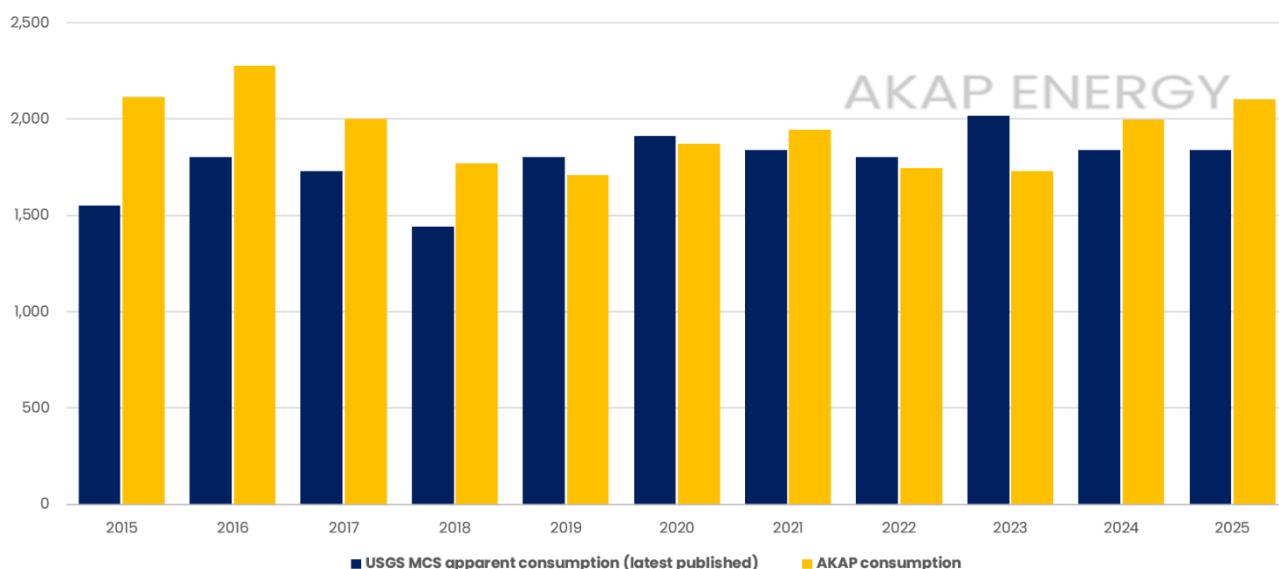
USGS does not measure US helium consumption, it is derived consumption (sales plus imports minus exports). Errors in the trade data lands directly in the demand number.

The clearest example is MCS 2021 in which the 2020 figures with sales of 2,704 mmcf, imports of 180 mmcf and exports of 3,605 mmcf imply US consumption of -721 mmcf (i.e. negative). The report printed 1,442 mmcf. The report stated: *However, substantial increases in exports reported in 2018, 2019, and 2020 suggest that domestic consumption declined, although no significant decline in U.S. helium consumption is thought to have taken place. For that reason, apparent consumption for 2018–2020 was estimated to have remained at about 40mmcm (i.e. 1,442 mmcf).*

The reported exports in 2020 (in MCS 2021) were halved the following year (MCS 2022) but the gap was visible a year before the correction. The export restatements also changed the level of US demand. Between the MCS 2023 and MCS 2024 editions, apparent consumption for both 2020 and 2021 moved from ~1.4bcf to ~1.9bcf.

Consumption is where the comparison gets interesting. Our derived US demand is ~2bcf in 2024 and ~2.1bcf in 2025, against a flat ~1.8bcf from USGS. Averaged over 2021–25, the two are within ~1% of each other. That is not because the USGS inputs are right: its supply line includes Canadian helium and ignores helium injected into private storage (~270 mmcf in 2024 alone), while its export line is overstated. The two errors largely offset in the residual.

US helium consumption, USGS implied vs AKAP (mmcf)



USGS apparent consumption is the latest published figure for each year.

Source: USGS MCS, AKAP Energy

MCS 2026 has cut down the data available by no longer publishing helium withdrawn from the former BLM storage facility now owned by Messer. A new footnote states that the US figures include helium extracted in Canada and purified in the US, without giving a split. On

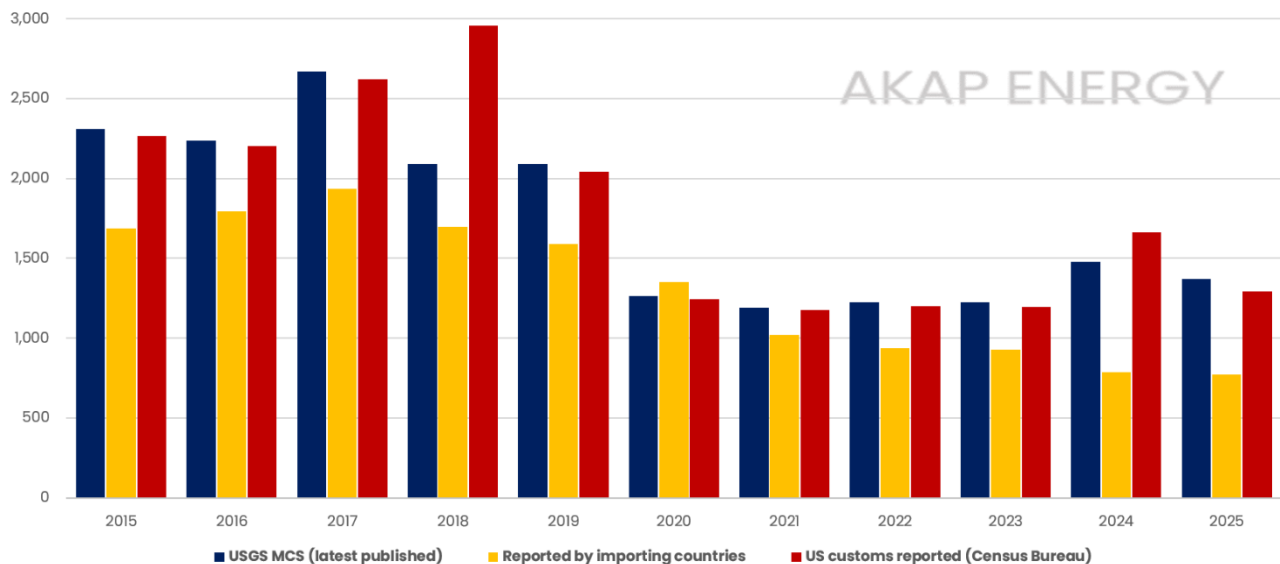
USGS's own Canadian production numbers, that is up to 216 mmcf in 2024, ~7.5% of reported US sales, up from ~18 mmcf (0.6%) in 2017–19. Stripping it out, US sales fall 16% between 2018 and 2025 rather than the 10% shown as published and the US share of world output in 2024 is ~40% rather than ~45%. Private cavern storage, now the main buffer in the US system, is mentioned but not quantified.

Data from the importers of US helium shows a very different picture

We look at another way to derive the US helium balance. Instead of relying on unreliable US export declarations, we aggregate what importing countries report receiving from the US and combine it with our own field-level view of US production, Cliffside withdrawals and private cavern storage movements (from our recently released [AKAP Storage Model](#)). Our approach tells a noticeably different story versus the USGS' US helium balance.

There is a difference in exports. USGS has US exports at 1.5bcf in 2024 and 1.4bcf in 2025. US customs data show ~1.7bcf and ~1.3bcf, while our adjusted numbers show only ~0.8bcf for both years. We are using data from importing countries where we see higher quality data and our adjustments to US exports for countries that do not have reliable import data.

US helium exports by source (mmcf)

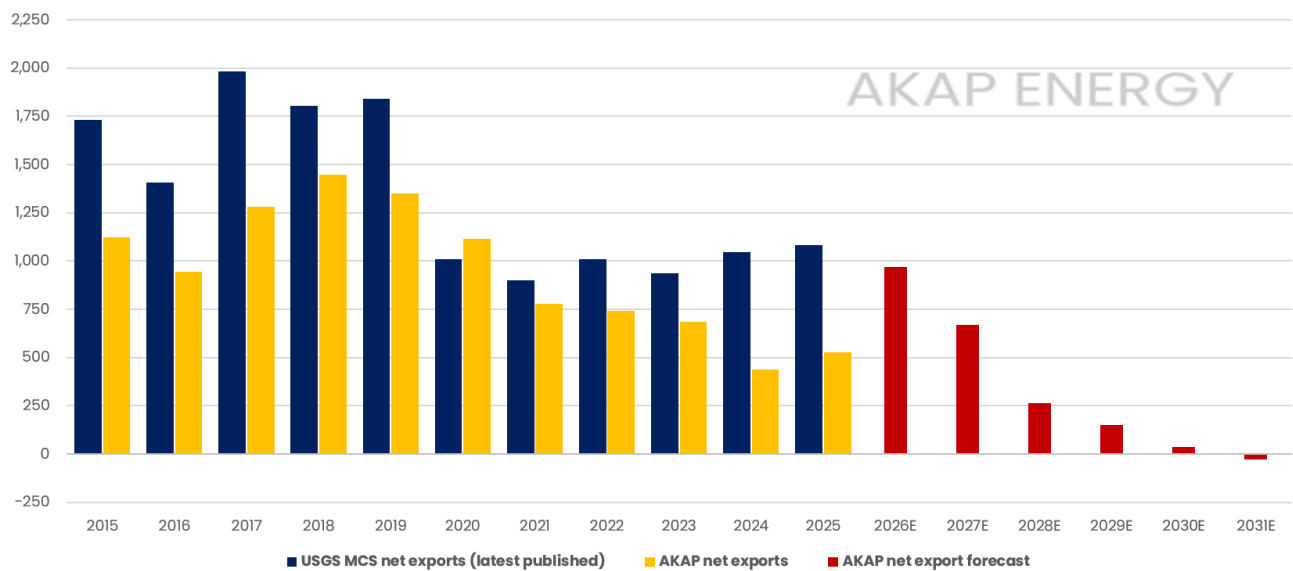


Source: USGS MCS, US Census Bureau, national customs data of importing countries, AKAP Energy

From Net Exporter to Net Importer

Net of imports, our derived view puts US net exports at ~440 mmcf in 2024 and ~530 mmcf in 2025, less than half the ~1,050–1,080 mmcf implied by USGS. On the USGS numbers, net exports are over a third of US sales. On ours, they are between a sixth and a fifth of US supply. Therefore, although a net exporter, the US is in a much more delicate situation than USGS report implies. The situation in 2026 looks more comfortable but the reason for the large net exports is that the US has had to step in to supply the gaps left by Qatar, doing so by drawing down on storage.

US net helium exports, USGS vs AKAP (mmcf)



2026E onwards AKAP estimates. Source: USGS MCS, AKAP Energy

Based on our estimates, the US export surplus disappears within five years. US production grows with the wave of new projects in New Mexico, Colorado, Montana and elsewhere but Cliffside withdrawals run down from ~500 mmcf in 2025 to zero by 2029. At the same time, domestic demand grows by ~4% a year between 2027 and 2032.

On our numbers, US net exports fall from ~970 mmcf in 2026, flattered by private storage drawdowns during this year's Ras Laffan outage, to ~670 mmcf in 2027, ~260 mmcf in 2028 and under 100 mmcf in 2030. In 2031 the US becomes a net importer of helium. This shows that by 2028, the US is vulnerable to production outages or higher than expected demand, that could tip it into a net importer. This is a clear rationale for helium being added back to the US Critical Minerals List.